SOCIETY FOR ADVANCEMENT OF MANAGEMENT

AM Advanced Management

UNIVERSITY OF MICHIGAN
FEB 19 195
ENGINEERING LIBRARY

COMBINED WITH MODERN MANAGEMENT

MANAGEMENT TRENDS

Policies, Principles and Techniques

IN THIS ISSUE

- Advantages of Big Business in Small Plants
- Proposal to Clarify Procurement Responsibility
- How Charts Control Quality at Ford
- Sources for the Development of Executives
- Human Relations, the Labor Leader and Society
- He Analyzed Work — F. W. Taylor, "Father of Scientific Management"
- Spending VS Savings — The Importance of Velocity

DECEMBER 1950

Free Consultation on PAYROLL PROBLEMS

Procedures . . . Forms . . . Labor-Saving Equipment . . .
Mail Coupon or Phone Remington Rand Today

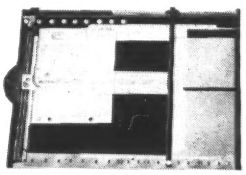
If recent changes in your business, expanded employment, shifts in labor distribution or longer working hours have created new payroll problems . . . if you're pressed in meeting payroll deadlines . . . if you're having difficulty with preparation and balancing of tax reports and summaries in relation to new tax laws . . . if overtime on payrolls is becoming excessive . . . you can stop worrying right now.

To help promote top production, top efficiency in all vital lines of manufacturing and distribution, Remington Rand will give high priority to your request for free consultation on any payroll problem. And, if you wish, we'll present a detailed proposal covering an entire new payroll system, if such seems to be necessary to meet your needs economically under present conditions.

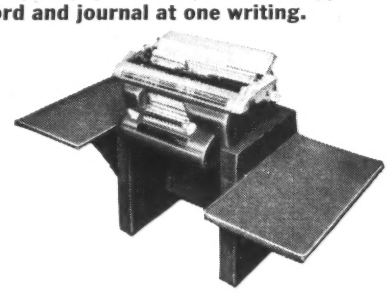
Authoritative Counsel Without "Product Bias"

Business systems, machines and equipment are, of course, our business. But when it comes to payroll (or production control, inventory control or any other phase) we're not limited to any one method or device or even to a few. We make them *all*. We are in a position to approach the problem strictly from the standpoint of your requirements, and your best interests, and to recommend the *right* manual or machine method, and time-saving auxiliary forms and equipment.

Large or small, your problem will receive prompt attention from Remington Rand specialists thoroughly versed in payroll procedures. Send the coupon—do it today—or phone us locally for quick action.



Manual Multi-Matic method gives you pay check (or cash slip) earnings record and journal at one writing.



"Foremost" Machine method prepares all records and control totals simultaneously, with mechanical accuracy.

Punched-Card Tabulating Method provides complete payroll records and related cost data.

For your needs we have no reason to recommend anything but the right machines and systems.

We make them all

Remington Rand INC

Management Controls Reference Library, Room 1567
315 Fourth Avenue, New York 10, N. Y.

Please contact us regarding payroll systems. It is understood that this request does not obligate us in any way.

*Name*_____ *Title*_____

Company _____

*Approximate no. of employees on payroll*_____

Address _____

*City*_____ *Zone*_____ *State*_____

Volume XV No. 12

December, 1950

Editor
ROBERT B. ROSS

Consulting Editors
DON F. COPELL JOHN F. MEE

Advanced Management

NATIONAL OFFICERS: 1950-51

President—DILLARD E. BIRD, *Management Counsel, New York, New York*
Executive Vice President — LEON J. DUNN, *Assistant to Vice President, Veeder-Root, Inc., Hartford, Connecticut*
Secretary—HOWARD K. HYDE, *Department of Defense, Washington, District of Columbia*
Treasurer — BRUCE PAYNE, *President, Bruce Payne & Associates, Westport, Connecticut*
Director-at-Large—CHARLES C. JAMES, *Associate Counsellor, Stevenson, Jordan & Harrison, New York, New York*

NATIONAL VICE PRESIDENTS

Vice President, Chapter Operations—HARRY M. HOPKINS, *Works Manager, The Tool Steel Gear and Pinion Company, Cincinnati, Ohio*
Vice President, Management Research and Development — HAROLD F. SMIDDY, *Vice President and General Manager, Chemical Department (Pittsfield, Massachusetts) and General Manager, Air Conditioning Department (Bloomfield, New Jersey), General Electric Company*
Vice President, Student Chapter Operations and Development—RALPH L. JACOBS, *Management Consultant, Cincinnati, Ohio*

PAST PRESIDENTS

ORDWAY TEAD, *Editor of Social and Economic Books, Harper & Brothers, New York, New York* (1936-37)
WILLIAM H. GESELL, *Vice President, Lehn & Fink Products Corporation, Bloomfield, New Jersey* (1937-39)
MYRON H. CLARK, *Management Consultant, Boston, Massachusetts* (1939-41)
J. KEITH LOUDEN, *Vice President and Assistant to the President, York Corporation, York Pennsylvania* (1941-42)
PERCY S. BROWN, *Retired New Hampton, New Hampshire* (1942-44)
RAYMOND R. ZIMMERMAN, *Vice President, Trundle Engineering Company, Washington, District of Columbia* (1944-46)
HAROLD B. MAYNARD, *President, Methods Engineering Council, Pittsburgh, Pennsylvania* (1946-47)
WILLIAM L. MCGRATH, *President, The Williamson Heater Company, Cincinnati, Ohio* (1947-48)
CHARLES C. JAMES, *Associate Counsellor, Stevenson, Jordan & Harrison, New York, New York,* (1948-49)
DILLARD E. BIRD, *Management Counsel, New York, New York* (1949-50)

CONTENTS

Big Business in Small Plants 2
by Don G. Mitchell
President, Sylvania Electric Products, Inc.

Centralized Procurement Responsibility 6
by Frank M. Folsom
President, Radio Corporation of America

The Man Who Analyzed Work 7
by Roger Burlingame

Modern Quality Control 9
by Robert M. Currie
Assistant Manager, Analysis Department, Quality Control, Ford Motor Company

Executive Development Through Colleges and Universities 14
by Earl G. Planty
Executive Counselor
Johnson & Johnson
by Dr. C. K. Beach
Professor of Industrial Engineering
Cornell University
and Gordon Van Ark
Division Manager, Personnel Department, General Foods Corporation

Personalities in Labor-Management Conflicts 19
by A. A. Imberman
Imberman and DeForest

Economic Puritanism: Fact or Fiction 23
by Paul M. Mazur
Partner, Lehman Brothers

Society News 26

Management Bookshelf 28

Photographs and Illustration credits: page 2, Sylvania Electric Products, Inc.; page 7, *Nation's Business;* page 9, Ford Motor Company; page 14, New York University Management Round-table.

DISCLAIMER: Every effort is made to verify the information published in ADVANCED MANAGEMENT. The opinions of the authors, however, are not necessarily the opinons of the Society and this periodical accepts no responsibility in connection with any liability which might develop as a result of articles published. All unsolicited articles, manuscripts, letters, and pictures sent to ADVANCED MANAGEMENT are sent at the owner's risk, and ADVANCED MANAGEMENT expressly repudiates any liability or responsibility for their safe custody or return.

ADVANCED MANAGEMENT, published monthly by Society for Advancement of Management, 84 William Street, New York 7, N. Y., is merged with MODERN MANAGEMENT, and is successor to The Society for the Advancement of Management Journal, the Bulletin of the Taylor Society and of The Society of Industrial Engineers. Re-entered as second-class matter, December 23, 1949, at the Post Office at New York, N. Y., under the Act of March 3, 1879.
Copyright, 1950, Society for Advancement of Management.
Subscription rate: $8.00 per year. Single copies: 75 cents (members); $1.00 (non-members). An index to ADVANCED MANAGEMENT is published annually, and the contents are also indexed in *Industrial Arts Index* which is available at Public Libraries. Notification of address changes must be given four weeks in advance.

Close attention to small groups results in substantial reductions in cost to selling price ratios.

Big Business in Small Plants

By DON G. MITCHELL

President, Sylvania Electric Products, Inc.

A "small" large company analyzes some of the advantages of decentralized operation scientifically applied on a large scale.

WHILE OUR total business is fairly large—$150 millions of sales—our plants for the most part are small and by that I mean small in comparison with the size of plant we would need were all of our production carried on in one or two plants. None of our factories, however, with the possible exception of one, could be called small if we accepted the definition of one hundred employees or less. Because of the nature of our work, it would not be possible to operate in plants of such small size at a cost that would permit us to compete with other manufacturers in our field.

In other words, size is relative not just to the number of employees or dollars of investment but, what is more important, to the character of operation. There is a limit to smallness which must be observed if efficient operation is to be had. A plant too small to use good materials handling equipment, or to accommodate mass production devices, would not be able to survive in industries where profits are figured in fractions of a cent. In every instance the minimum size of plant is, to a large degree, determined by the characteristics of the market and product.

Right now, with the exception of one small test equipment plant, our smallest plant has 230 employees and the largest has 2,900 employees. Except for five plants, all of our plants have less than 1,000 employees each, so you see we manufacture in a great many fair-sized plants although, by comparison with others in our industry, we look upon them as small plants.

Breaking the manufacturing operations up into these small plants was deliberate with us, after we experienced the benefits from small plant management during the war, when we had to turn to a number of feeder plants to help our larger factories take care of a sudden load of war orders many times our pre-war production capacity.

UNITS OF A SMALL LARGE COMPANY

We operate under a policy of decentralization of manufacturing wherein the line authority is out in the field and the functional authority stays at headquarters. To state it simply, although it doesn't always operate exactly that way, the local plant managers run their own show through their respective divisions, while the fellows in the New York headquarters office act in a planning and consultive capacity.

Obviously, there are lots of things we in New York do for a local manager that he would have to do for himself, or hire someone to do, if he were entirely on his own. For these services the local people are charged in the prorates.

While our total business is such that we may be classed as a small large company, our experience has convinced us that small plant management can accomplish relatively as much, and sometimes more, than big plant management. So far as we can see, there are no tools of management that are enjoyed by big plant management that are not available to the management of small plants. In fact, we see many advantages to small plant management that very large plants do not as a rule enjoy, such as flexibility, mobility, good employee morale and executive training through independence and responsibility.

On the social side, there are many advantages to operating in small plants. I shall not go into these social benefits today, since I discussed them with you at some length three years ago. Nevertheless, I want to remind you that since management's major responsibility is the efficient production of goods by human beings, the happier employees are the better foundation you have for effective management.

During the past year our employment has increased almost 50 per cent, partly in new plants but mostly in a rapid expansion of output from existing plants. Under such conditions our at-

Adapted from a paper presented to the Management Division of A.S.M.E. at their recent Annual Meeting.

tendance and turnover experience has suffered somewhat. Nevertheless, when compared with national averages we come out rather favorably. We think this is exceptionally good when we consider the training problems of our new and expanded plants and the setting up problems of new and different facilities and product mixes.

Probably the most important part of small plant operation is the management personnel. Small plant managers have to be good all around men for the simple reason that the small plant cannot afford an army of specialists. That means that the managers have to know what is going on in every phase of the operation. If they are not good men, inefficiencies creep in and go undetected for a long time and that perhaps is one of the biggest reasons why so many small businesses fail. Our plant managers are expected to be so familiar with their operations that they can spot any leak or any inefficiency before it goes far enough to cause any great damage.

EXECUTIVE DEVELOPMENT

Incidentally, of course, the manner in which they handle their responsibility and the results they secure determine their opportunity to grow into bigger jobs—and they know it. Decentralization as we practice it, provides us with the kind of training we feel is necessary to fill our management personnel needs.

How well this works out may be seen when I tell you that just four weeks ago we had a top management meeting in New York which was attended by some fifty men—headquarters and divisional men. The average age of these men was 44 years and the average length of service with Sylvania was 16 years. With very few exceptions all of our management people have come up through the Company by this process of management training and selection.

Our experience with small plants so closely parallels that of the contributors to your new book on small plant management,[1] that I shall follow Doctor Hempel's outline in discussing how we operate a big business in small plants.

Although our plant managers do not have the responsibility of finding the money to finance the construction or enlargement of a plant, they are expected to advise on design and location and in the case of leased property to find satisfactory quarters. The decision to lease, or to own is frequently dictated by an examination of capital needs. There are times when the need for working capital overshadows the possible savings from ownership and at such times it is better to rent than to freeze capital in buildings. This is especially true for a small business that is growing rapidly and needs capital for inventory accumulation and for carrying receivables.

At the recent management meeting I spoke of, the local management men presented their long-range plans for expansion. We had made some plans at headquarters only to find that the local men, by being closer to the needs of their fields, were out ahead of us. In fact, it is our policy to encourage such thinking and planning on the part of the factory men.

A close working arrangement with a local bank is expected of each plant manager. In most instances our plants are the largest, or among the largest, employers in the community. Our success, therefore, means much to all local businessmen and, since the bank is virtually the common denominator of local business, it is important that our relations with it be of the best. It can serve us in many ways.

In choosing a plant location we try to pick a place that not only has the necessary facilities in terms of utilities, transportation and available labor, but also has a good community character in terms of government, education, growth potential and kind of people. While we bring in key personnel to new locations, we know from experience that we cannot long continue to provide all supervisory personnel from the outside, if we are to maintain the best community relations. Some places, however, have so far gone to seed, or have had certain work habits ingrained for so long a time, as to make them unadaptable to modern management methods. These places should be shunned by both large and small plants.

PUBLIC RELATIONS

Our whole philosophy of community relations can be summed up in these words—we want to be neighbors. Simply because we may be a large employer of local labor, does not mean that we have to run the town. That's not our business nor do we care to have that responsibility. If the town cannot run its own affairs well it won't be a good town for one of our plants. That does not mean that we do not do our part. As a neighbor we want to do what we are called on to do just as any other good citizen.

We encourage our people to take part in civic affairs as citizens, to be active in charitable drives, in service clubs and in young people's activities. And that means not only the management and supervisory people, but all the employees. In one plant we had the experience of having one of our machine operators holding the office of mayor, while the plant manager was a member of the town council and it worked out well.

Because we believe in being a neighbor, we do not believe we should take advantage of any community either in terms of wage rates or special concessions. If our tax rates were made specially low somebody else's rates would have to be higher and sooner or later somebody would be critical of us and I think justly so.

We like to feel that the payroll we create in a small community helps materially to improve the local economy but we know that unless we live as a neighbor and good citizen, all the money we bring into that place will not bring the good-will we want.

Communities generally like small plants. If you could see the mail we receive and the personal calls we get inviting us to establish a plant in some area, you would realize that what I have just said is an accomplishment in understatement.

Two weeks ago I was in Shawnee, Oklahoma, where we were opening a new plant. The warmth of our welcome was just beyond description.

The national government also wants small plants and, as you know, through a special office for small business it did everything it could during the last world war to divert orders to this group. Large manufacturers sub-contracted much of their war work to these small concerns. Our own experience in setting up feeder plants, as I have mentioned, was such as to encourage us to decentralize.

One of the weaknesses of small plant management has been the absence of planning based on carefully prepared data. Living from day to day, and plan-

[1] *Small Plant Management*, edited by Dr. Edward H. Hempel under the auspices of the Management Division of A.S.M.E. Published by McGraw-Hill.

ning only when there is trouble ahead, are bound to give rise to poorly thought out decisions. Because there is less margin for error in small operations, it seems to me that there must be careful planning both for current and long-range operations.

PLANNING AND CONTROLS

Much of the planning with us starts out in the Divisions and plants. Our job in New York is largely that of coordination. We must find the money for expansion and so we must weigh all the plans in order to get the best investment balance. It is our job also to determine how many eggs we shall put in any one basket and to decide whether we need some new baskets that we do not have.

We have seven product divisions each of which has one or more plants. Within each division are all of the essential functions of manufacturing, sales and control. Since the responsibility for divisional earnings rests with these product general managers, they are conscious of the need for careful planning. Furthermore, it is just human nature for people to make the greatest effort to make their own plans work.

Obviously, there must be a pattern of local organization for a company with decentralized operations. How that pattern is adjusted to fit local conditions is a matter for local determination. There must, however, be organization with well defined lines of authority and responsibility. Every job must be defined. By delegating authority the plant manager must exercise greater judgment in selecting and training his staff, so that he can use his own time to best advantage. If he has done his job well he will have a better perspective on his operations than if he tried to do every management detail himself.

In the final analysis the measure of success of any plant is its productivity and cost. We have three yardsticks — standard costs, relation of cost to selling price and return on investment. Standard costs, which are determined on the basis of experience and measurement, are performance bogies that enable a plant manager to know from month to month how well he is doing and the reasons for variation from the standard. They thus provide the plant manager with an overall or general control. Standards, of course, are subject to periodic review to give effect to changes in labor rates and material prices.

Relation of cost to selling price is really the break-even control, while return on investment is the measurement of corporate soundness.

In addition there is a continuing check of individual operations in the manufacturing process to help a manager to maintain a close control of his costs and quality.

Our series of control may seem elaborate to some small plant operators but when we see the results in reduced spoilage and improved costs, we are confident that they pay for themselves many times over. In the past few years, for instance, we have been able in several of our plants to reduce the cost to selling price as much as a third and we have been able also to reduce greatly the loss from spoilage.

Not only does lessened spoilage reduce costs per unit of output but it also increases the number of saleable items that can be secured from a limited amount of raw materials. That, of course, is of major importance at this time.

Legal assistance is given by our legal staff, as well as by local attorneys who are available on call. Our people are encouraged to seek legal advice wherever there is the least doubt, on the theory that it is easier and less costly to correct a mistake before it is made than afterwards.

One of the major problems of manufacturing management is that of good labor relations. If everything else were equal between centralized and decentralized operation, we think labor relations alone would tip the scales in favor of the latter. As I explained to you three years ago, we have found that the managers of small plants are much closer to the employees under them than the managers of a large plant could be. By working and living together a mutuality of interest is built up.

Each of our plants has its own personnel manager who tries to the best of his ability and conditions to hire people as needed who will pull together. Generally speaking, a pretty good job has been done in this direction because we feel that we have a pretty fine group of employees working for us.

The plant chapter of the Sylvania Employees Association handles its own programs for employee social activities. Previously the contributory employee benefits had been sponsored by this association. Within the past few months these benefit programs have been made non-contributory and are now administered entirely by the company.

A vested savings and retirement program to which eligible employees contribute a percentage of earnings and the Company contributes a lesser percentage of employees earnings plus a percentage of profits before federal taxes, has proven popular with the employees.

CENTRALIZED VS DIVISION SALES RESPONSIBILITY

Sales are organized on a related products basis. For some time our sales departments operated independently of the factories under the direct supervision of a vice-president at Company headquarters. Within the past year we have placed line authority for sales under the several product divisions because we believe that sales and production must be coordinated to achieve the best results. Since manufacturing efficiency is so dependent upon production planning, it is essential that the factories know the short and long-range market requirements and feel that their success depends not only on how low they can get their costs, but also on how well they serve their customers.

In other words, after considerable experience with centralized sales control, we have gone back to the more intimate sales operation of a small company. At the same time, however, we have retained the functional supervision of sales at headquarters for general policy, coordination and consultation.

Technical research is essential to any company that intends to improve its competitive position. A great many companies, however, look upon research as an expense that can be curtailed whenever the going gets a little rough. Unless there is a continuing program of research, it will be difficult to hold research men and the end product will seldom be available when most needed.

Much of our product development and improvement is done at the division and plant level on a sustained basis. Where there are long-range exploratory projects, as well as certain well defined projects that will require considerable investment and a variety of talent, we feel they can better be conducted at central laboratories equipped for such purposes. Small companies have the same thing available in outside consult-

ing research organizations. A company of our size can afford its own central organization because there is always enough to do to keep it continuously busy.

There is a tendency for a large centralized organization to impose an elaborate program of paper work upon its individual operations, particularly accounting. We have found that it is possible to over control accounting-wise to the point where the control mechanism contributes to inefficiency.

Now each of our plants is provided with the staff and tools necessary to give it only such information as is needed for adequate control. The central accounting department takes care of co-relation, standardization and general corporate information.

ROLE OF THE CONSULTANT

There is no end to a discussion of our experience in manufacturing in small plants. Obviously, I have been able to hit only a few high spots and these only briefly.

In preparing this review, the thing that struck me most forcibly was that there is nothing we do in our small plants, in spite of the fact that overall we are a large company, that independently operated small plants cannot do. True, there are services that our headquarters organization performs for these small plants but don't forget that they cost money and are charged back in the prorates. Similar services are available through consulting firms to small companies, the only difference being that small companies do not always like to pay the cost, whereas our small plants have no choice.

Most large companies were once small but in the process of becoming large, the management became absorbed, more and more, in major corporate matters to the point where intimate contact with the day-to-day operations and with the personnel was lost. Our feeling is that operating in small plants with a high degree of local authority and responsibility helps us to maintain that intimacy without losing any of the benefits of a strong central organization.

I would like to leave one final observation with you. Public policy demands that no one company become so dominant in any field as to be in a position to control that market. Accordingly you will find that while big companies will grow, their individual market positions will taper off. In fact, that process is already underway. Small business, in other words has a fine future in this country. Bear in mind, however, that the consuming public will demand just as good performance and just as low a price from the small as from the large producer and sometimes better. It is essential, therefore, that small plants be just as alert to modern management practices and just as ready to invest in modern methods and facilities for improving products and reducing cost.

MANAGEMENT BOOKS *Received*

The Welfare State, Menace or Millennium?, What is it?, by JOHN C. KIDNEIGH, *What are its Political Repercussions?*, by ASHER N. CHRISTENSEN, *What are its Costs?*, by DALE YODER, and *What Does it do to People?*, by JOHN E. ANDERSON, 58 pages, published under the auspices of Social Science Research Center of the Graduate School of the University of Minnesota.

Improving the Supervision in Retail Stores, Extension Bulletin No. 7, by PAUL J. GORDON, 66 pages, published under the auspices of the New York State School of Industrial and Labor Relations, Cornell University, Ithaca, New York. No charge to New York residents who desire less than five copies.

Taft-Hartley After Three Years and the Next Steps, by EMILY CLARK BROWN, 79 pages, published under the auspices of the Public Affairs Institute, 312 Pennsylvania Avenue, S. E., Washington, D. C., $.50

Essays on Federal Reorganization, by HERBERT EMMERICH, 159 pages, University of Alabama Press, University, Alabama, $2.50

Personnel Manual for Executives, by ROSS YOUNG, 207 pages, McGraw-Hill Book Co., New York, $2.75

New Provisions Revenue Act of 1950, prepared by the Publishers of Topical Law Reports, Commerce Clearing House, Inc., 225 N. Michigan Avenue, Chicago 1, Illinois.

Applied Experimental Psychology, by CHAPANIS, GARNER, AND MORGAN, 434 pages, John Wiley & Sons, Inc., New York City, $4.50

Giant Brains, by EDMUND C. BERKELEY, 270 pages, John Wiley & Sons, Inc., New York City, $4.00

Revenue Act of 1950, 250 pages, Prentice-Hall, Inc., 70 Fifth Avenue, New York City, $1.50

Employers' Associations and Collective Bargaining in New York City, by JESSE THOMAS CARPENTER, 419 pages, Cornell University Press, Ithaca, New York, $4.50

Theory of Games and Economic Behavior, by JOHN VON NENMANN, AND OSKAR MORGENSTERN, 641 pages, Princeton University Press, Princeton, New Jersey, $10.00. (Revised Edition).

Printing Types and How to Use them, by STANLEY C. HLASTA, 304 pages, Rutgers University Press

Engineer's Dictionary, Second Edition, by LOUIS A. ROBB, 664 pages, John Wiley & Sons, Inc., New York City, $12.50 (Spanish-English & English-Spanish)

Mid-Century, The Social Implications of Scientific Progress, edited by JOHN ELY BURCHARD, 549 pages, $7.50

Who's Too Old To Work?, Institute of Labor and Industrial Relations, 27 pages, University of Illinois, Champaign, Illinois, Copies available on request.

Reconstruction of Economics, by BOULDING, John Wiley & Sons, Inc., New York City, $4.50

Seniority Rights for Supervisors, by REXFORD P. KASTNER, 60 pages, Research bulletin no. 7, New York State School of Industrial And Labor Relations, Cornell University, Ithaca, New York, $.15

The Culture of Industrial Man, by PAUL MEADOWS, 216 pages, University of Nebraska Press, Lincoln, Nebraska, $3.75

Policies and Controls in a War-Burdened Economy, 21 pages, published under the auspices of the Chamber of Commerce of the United States, A Report of the Committee on Economic Policy, Washington, D. C., $.25

Centralized Procurement Responsibility

A Proposal for the Clarification of Responsibility in Procurement in the Time of War or in the Time of Peace

By FRANK M. FOLSOM

President, Radio Corporation of America

The former Chairman of the Procurement Policy Board of the WPB presents a vital principle of far-reaching significance.

IT IS PROPOSED that a Procurement General be appointed by the President of the United States with the approval of Congress. The responsibility involved in this appointment would be similar to that of the Comptroller General.

Discussions have gone on for years as to whether responsibility of procurement should remain with the Services, meaning Army, Navy, Air Corps, Marine Corps, Coast Guard, or with the other Government procurements handled by the Treasury Department and other Government agencies. No clear-cut settlement of the issue has ever been made. This proposal is to bring into the open the advisability of having a Procurement General to preside over matters of policy for all Government procurement.

The tenure of such an appointment would be for a period of ten or fifteen years, and would call for a man of stature from a merchandising enterprise such as General Wood, or an outstanding purchasing agent from a corporation who has had experience in directing purchasing activities on a large scale.

POLICY COORDINATION

It is not proposed that any actual purchasing be done by the Procurement General or his staff. He would simply accumulate information concerning statistics relative to commodities and the condition of world markets. He would advise the Services, Congress, the President, or the War Production Board or whatever agency it might be, as to the status of particular commodities and whether or not they should be stockpiled by the Government; whether it is the right time to buy a particular product; when to curtail procurement, and when to enlarge upon the activities. Such a supervisory control over all Government procurement activities would avoid duplication of effort. For example, under such control the Army would not go into the market in Portland, Oregon, to buy butter, only to find that the Department of Agriculture had been there the week before stockpiling butter from a subsidiary plant.

With such orderly direction and clearance of these activities the Government could save many, many millions of dollars. It would eliminate the possibility of individual Government agencies going into markets at different times without any relationship to the procurement activities of other Government agencies. The President, any member of the Cabinet, or the Congress would have available the advice of a professional who would be able to direct the basic procurement activities of the Services.

In this way the purchasing would be done directly by the Services as their needs and requirements necessitated, together with detailed specifications of their requirements, time of delivery, etc.

TIMING AND ECONOMY

By establishing a broad and systematic program whether for commodity purchase by a Government agency, for stockpiling for war or for normal buying by Federal agencies in peacetime, great advantages would be gained. For instance, in the purchase of tires, there would be the right time to make such a purchase, and it might even be decided that a particular agency could make the best deal and distribute the tires.

Under such conditions it becomes clear that great benefits could accrue to the Government under the leadership of a competent Procurement General. It would eliminate the possibility of funds not being available for necessary requirements of the Services. Further, there would be no excuse for criticising an agency for waste or for not doing a certain job. Therefore, the appointment of a Procurement General and the establishment of a broad, over-all policy would make for ideal organization and coordination that would guide and aid all of the Government's procurement activities.

THE SPIRIT OF SERVICE

So much depended on the kind of people and the spirit of the people. I say it can work and it can work any time under any circumstances because it did work. For instance, we delegated the job to the Army to buy all the Navy's food, and I will assure you when I broke that news to the admiral he didn't like it. He thought it was sacrilegious, it was wrong, but finally it worked out and worked out very well.

I think the procurement job as a whole for all the services was done very, very well, and it was done well because the people who did the job had no other interest except that one particular job, and they came there to do it. The job was a credit to the profession they represented.

FRANK M. FOLSOM commenting on WPB Procurement coordination.

The Man Who Analyzed Work

Science was the key, could he make it work?

By ROGER BURLINGAME

Revealing some of the reasons why Frederick W. Taylor won world fame as the "Father of Scientific Management".

ONE SPRING DAY, just before the dawn of the twentieth century, some 600 men were working in the huge yard of the Bethlehem Steel Works. They were scattered over a square mile. Some were loading pig iron. Many were shoveling —sand, cinders, coal, ore. Among the shovelers, watching each with a keen eye, moved a "revolutionist."

Today, 50 years later, the word revolutionist conjures up a picture of a Stalin, a Lenin, a Karl Marx—plotting to overthrow government by force. In the upset state of our world we are likely to forget the other kind of revolutionist —the genius who quietly scraps worn-out, wasteful customs and systems and replaces them with something wholly new, to the immense benefit of mankind. Such prophets are on page after page of the American story; Franklin, Jefferson, Whitney, Edison and the great business reformers, Patterson and Wanamaker. Such a genius was Frederick Winslow Taylor who watched the shovelers at Bethlehem.

The yard men looked at Taylor with suspicion. Was he crazy, this company officer, writing in his notebook about every move in this common, dirty, $1 a day job? But then men in management had been asking the same question for 20 years. They had called him a "radical," a theorist, and yes, too, a lunatic. The queer thing was that everywhere this "madman" had worked—even as gang boss or foreman or machinist-experimenter—output had gone up, cost had gone down and strikes had dwindled.

Workers laboring for $1 a day eyed Fred Taylor with suspicion when he appeared among them and made many notes on a pad.

SCIENTIFIC SHOVELING

Watching the shovelers on that spring morning, Fred Taylor knew that everything they did was wrong. The dozen different sizes and shapes of the shovels bore no relation to the material they worked in. Each shovel was owned by the man who wielded it; it had been chosen and bought because a fellow liked its look or feel. One man lifted 40 pounds of ore on his shovel, another only four or five of rice coal on his. The total tonnage shoveled varied from day to day. Taylor knew at once that there must be an ideal shovel-load which would give a maximum day's weight, regardless of the material. So he picked two good men and proceeded to establish what he called the "science of shoveling."

He started them out with a shovel holding 38 pounds of ore. He counted the day's shovelfuls, then weighed the day's tonnage. The next day they used a shorter shovel holding only 34 pounds.

Each day they reduced the pounds per shovel and the total tonnage of each man rose. But below the 22 pound shovel-load it began to go down. Finally Taylor set 21½ pounds as the ideal.

After these experiments, Taylor installed a shovel room at Bethlehem and told the men to leave their own at home. When he started work, a ticket with a number was given each man. In the shovel room he found the corresponding shovel. If his job was rice coal he got

Reprinted from NATION'S BUSINESS, *courtesy of the author and the publishers.*

a big one holding 21½ pounds of rice coal; if it were ore, he got a small one holding 21½ pounds of ore. With this "science" plus some other devices, Taylor was able to cut the Bethlehem yard labor force by two thirds and raise daily loadings from 16 to 59 tons per man.

Here was a simple example of the way Taylor worked. His thousands of other studies were more complicated. His mind, a vast library of working blueprints, was, from his childhood, exact, scientific, detailed. Instinctively he split everything he saw into its minutest parts. As a boy, playing croquet, he worried his fellows by plotting the angles of his strokes. He counted his steps as he walked to learn the most efficient stride. A great lover of sport, he analyzed every motion of an athlete. Perhaps it was this approach which made him, in 1881, a tennis doubles champion of the United States.

Taylor entered the industry by accident. At 16 he was a brilliant student, headed for a career in law. After two years at Phillips Exeter Academy, he passed, with honors, the entrance exams for Harvard. But the work had wrecked his eyes and a doctor told him he must rest—an intolerable prescription. After some restless months, he went into a Philadelphia machine shop as an apprentice. That ended the law idea for good. By the time he was 22, the sight, sound and smell of industry had entered his soul to stay.

Skilled jobs were scarce in 1878. The only thing he could find as a start in industry was the stint of a day laborer at the Midvale Steel Works. Here he learned shoveling the hard way. But by the end of the year he had been promoted three times.

DIRECTION AND CONTROL

In his first years at Midvale, he found that the positions of management and labor were in complete reverse. The workers ran the shop to their own liking. In spite of long hours and a show of arrogance toward the men, it was they, not the bosses, who determined methods, set output, controlled machines and tools. Each machinist performed every operation by his own "rule of thumb." Machine speeds, choice of tools, methods of work were decided by whim or hunch. There was systematic "soldiering."

All over the shop, steps, motions, time were being wasted.

Taylor saw the answer to the whole problem. If you could find out, to a split second, the best time for every operation, the ideal speed for each machine for each kind of work, you could base mathematical formulas on a precise fair day's work, set a timetable and proper pay rates for the entire shop.

There was nothing new about stop watch timing. But before Taylor, timing was done for an entire job. The record was useful only when that particular job had to be done again. Taylor split each job into its component parts and took the time of each. As these parts were common to many jobs, the records he made were flexible.

To take a simple, homely example: suppose you time a carpenter making a bookcase and note how many hours he takes. This record is useful the next time you want a bookcase. But when you want a sideboard, it has no value. Taylor would have disregarded the total bookcase time but he would have recorded so many seconds to saw the boards, so many to plane them, bevel them, drill screw holes, tighten screws. And with such records he could estimate the sideboard time as well.

When he began, Taylor figured he would get science into management in six months. It took him 26 years. He and a team of assistants built up a body of some 40,000 records and countless mathematical formulas. His schedules, routing, instruction cards stopped soldiering. The man who was not ready on time was just out of luck. Here, by the way, was a foretaste of the moving assembly line. But the total effect of these scientific gimmicks was to take control away from workers and put planning in the hands of management. To compensate men for loss of initiative, Taylor insisted on raising their pay.

At every step he met opposition. First the workers threatened to throw him "over the fence." Then conservative managers refused to believe that raising pay could lower the cost, per piece, of work. But Taylor was stubborn and tough. Men never got used to the contrast between his mild, sensitive face and the profanity that spiced his answers to their complaints. In time, workers recognized his fierce sense of justice and came to understand that, as Louis D. Brandeis said of him, they were the ones "for whom he labored most." In the end, balance sheets and pay envelopes did his selling for him.

THE FIRST 10 YEARS

By 1911, he was able to announce that 50,000 workers were employed in the plants that had adopted his "scientific management," that they were receiving 30 to 100 per cent higher wages than men of similar caliber elsewhere, that output on the average had doubled and that not a single strike had occurred.

In person, Taylor was of medium height, spare, close-knit and blond. In temperament he was the kind of paradox that is said to go with genius—intensely nervous and high-strung in contrast to his cool thinking. He was a victim of insomnia and nightmares: he could sleep in peace only when bolstered upright in bed. With all his force of will, he was modest to the point of fighting against having his name attached to his system. His staunch supporters, however, such men as Henry R. Towne of Yale and Towne, James Mapes Dodge of Link-Belt, Horace K. Hathaway of Tabor Manufacturing and Harrington Emerson, the efficiency engineer and many others, brought him world fame as the "Father of Scientific Management."

Taylor's lasting achievement was the establishment of business research. In the complexity of life in 1950, with its vast coordination of enterprises, its mathematics of cost accounting, its on-the-nose production, buying and selling, a business or industry without a planning department would be about as effective as a car without a steering wheel. When he died in 1915, Taylor had seen clearly into the vista ahead. Fortunately, in his scant 60 years of life he had laid the foundation for a new era.

THE TAYLOR BIOGRAPHY

A collectors item.

FREDERICK W. TAYLOR

Father of Scientific Management

by FRANK BARKLEY COPLEY

Limited Edition — In Two Volumes

NOW OUT OF PRINT

While the supply lasts, orders will be filled for this set at $20.00

Modern Quality Control

By ROBERT M. CURRIE

Assistant Manager, Analysis Dept.,
Quality Control Manufacturing Staff,
Ford Motor Company

How the adaptation of a statistical "road map" to quality analysis provides an effective tool for the guidance and improvement of production.

Control charts provide a tool to take action before quality problems become serious.

WITH SO MUCH being heard in recent years about this thing called "Quality Control," it is perhaps appropriate that one of us who has adopted such a program say a few things about the "what and why".

Quality Control is the inspection program of an earlier time brought up to date. The paramount goal is quality improvement. We are not so much interested in inspection for the sake of weeding out the defective product as we are in quality control for the prevention of defective product. The whole new concept of product quality in the Ford Motor Company is implied in our change of two years ago from the negative emphasis of an "Inspection Program" to the positive emphasis of a "Quality Control Program".

It has long been recognized that the man at the job holds the key to quality production. One of the first aims of modern quality control must therefore be that of stimulating the quality consciousness of all employees. This is not nearly as unworldly as it sounds, and such mass promotional programs as poster campaigns, pay envelope stuffers, quality slogan contests, quality exhibits, scrap displays, quality news features, quality queen contests, and others have played and will continue to play an important part in the Ford program.

But this sort of thing can be of lasting effect only as long as it is accompanied by the wholehearted, aggressive purpose of the top management to engage in effective methods for quality control. The employees have to hear more than chest-beating upstairs if they are to be convinced that quality workmanship is a matter of urgent concern.

Since no two things can be made exactly alike, the manufacturer's quality problem is really to determine how much product variation he can allow and then to employ methods which will insure that it is not exceeded. He sets up standards which his experience tells him are economic and workable, standards tight enough for interchangeability and loose enough for economic manufacture. Then he employs such gaging and measuring devices as are necessary for determining adherence to these standards. But no amount of effort devoted to the acquiring of sound standards and to the development of the best gaging and measuring devices can insure that top quality will be had. In order to build quality into the product there must also be a completely orderly approach to the study of inspection results. It is a matter of knowing where you have been on quality, why you were there, and where you are going, and it is in this matter that the relative newcomer, Statistical Quality Control, is very much involved.

The scientists and the mathematicians seem always to be ahead of the world in the development of theories which many years later find application in human affairs. Latest amazing example of this was the atomic bomb, which had its beginning in a body of seeming abstractions developed years ago by the great Albert Einstein. These were not really abstractions, as time was later to prove, but exacting studies in the rare atmosphere of higher mathematics and the behavior of matter. Without studies of this kind the energy potential in atomic fission would not have been suspected, and the release of such energy would not have been sought, let alone realized. It follows, then, that people like ourselves can benefit by research advances only to the extent that we are willing to put theories to work.

If we do not have the capacity to evolve great truths concerning cause and effect, we do at least have the capacity to capitalize on these truths when others lay them before us. So it is with the control of quality by statistical methods. Born out of long known theories involving such things as the laws of chance and central tendencies, statistical quality control, or Chart Control as we call it, is another good example of theoretical principles at work.

But how did the transition from theory to practice take place? In the early 1920's the Bell Telephone Company, The Western Electric Company and others conducted long and painstaking experiments with the application of statistical methods to qualify measurement. They were specifically interested in the development of inspection sampling methods which would give the maximum in quality protection for the least investment in actual inspection effort. Out of researches such as these, and the outstanding work of men like Dr. W. A. Shewhart, father of statistical quality control, came Chart Control — hailed recently as one of the outstanding developments in the field of Scientific Management.

THE QUALITY INDICATOR

Chart Control is a technique for the improvement of quality. Its singular difference from ordinary inspection is that it organizes the inspection results in a way which tells the normal quality capabilities of the process. It then gives warning of the tendency for the process to depart from normal quality, and reveals the effect of any corrective measures taken to restore the process to its normal.

In a nut-shell, Chart Control is industry's method for putting quality experience to work. Because it stems from statistical theory, there is a tendency for most of us to shy away from it. For this reason, too many otherwise enterprising manufacturers continue to perform inspections for the sole purpose of sorting the product they can sell from the product they must keep off the market. Most of their priceless experience in quality simply goes out the back door with the scrapped product. Inspection, in this case, has little chance of making a lasting contribution to quality, though it may on occasion create enough excitement to cause remedial action. But we all know that the extent to which there is action on a quality problem under the old inspection system depends more upon the conditions of the spleens and livers of those involved than it does upon the actual facts surrounding the problem.

No manufacturer can deny that he is interested in attaining top quality. He should, by the same token, be bent on the correction of poor quality and hence in controlling quality. If instead of really controlling quality, he tries to back into it by performing a series of 100% inspection screenings, then he can keep his customers happy, but in so doing price himself right out of the market. This kind of approach deals more with inspecting quality into the shipments than it does with building quality into the product. It is the latter that Chart Control is concerned with, whether in the steel mill, the automobile factory, or even in making cigarettes. Inspection becomes an integral part of the manufacturing process under Chart Control, instead of the post-mortem on poor performance.

We are often asked if the statistics are complicated. Chart Control and its intelligent use by the man on the job need be no more complicated than changing a tool bit. It is in fact just another tool, and one of such flexibility that it can be used in almost any kind of industrial activity.

SIMPLIFIED APPLICATION

At Ford we have deliberately stripped the shop program of detailed statistical theory in order that people of no great mathematical background might find it acceptable. The down-to-earth approach has worked to our great advantage. We leave the detailed statistics, few as they are, to Quality Analysts, men who are trained to handle them. The Control Chart is posted by the inspector and displayed right at the job where the operator, the job-setter, the foreman and everyone else can keep an eye on the quality score.

The benefits are varied. Among the more important are improved end-product quality, reduced scrap loss, reduced rework costs, increased productivity, purposeful machinery maintenance, and increased customer satisfaction. But of possible equal importance is the restoration to the worker of personal pride of performance, a most elusive factor which has been all but lost in modern mass production. Through Chart Control the operator is realizing his desire to be more completely identified with what he is making and how good he is making it. This is a major step forward in the area of human relations from which real benefits will ultimately derive.

There are three general kinds of work in which Chart Control is applied at the Ford Motor Company: machining and processing, assembly operations, and acceptance sampling of incoming parts. Since each of these is a distinctly different kind of activity, the methods of applying Chart Control are also different, even though the statistical bases are the same.

In machining and processing we make particular use of $\bar{X}$ and R Charts (called "average and range" charts) for controlling critical dimensions or process specifications. For example, if we were controlling quality on the $1.250 \pm .003$ I.D. of a spindle bushing we would proceed as follows. On the upper half or "Average" part of the chart we would plot the *average* diameter of a *sample* of five parts taken from the machine at hourly intervals. On the lower half, or "Range" part of the chart, would be

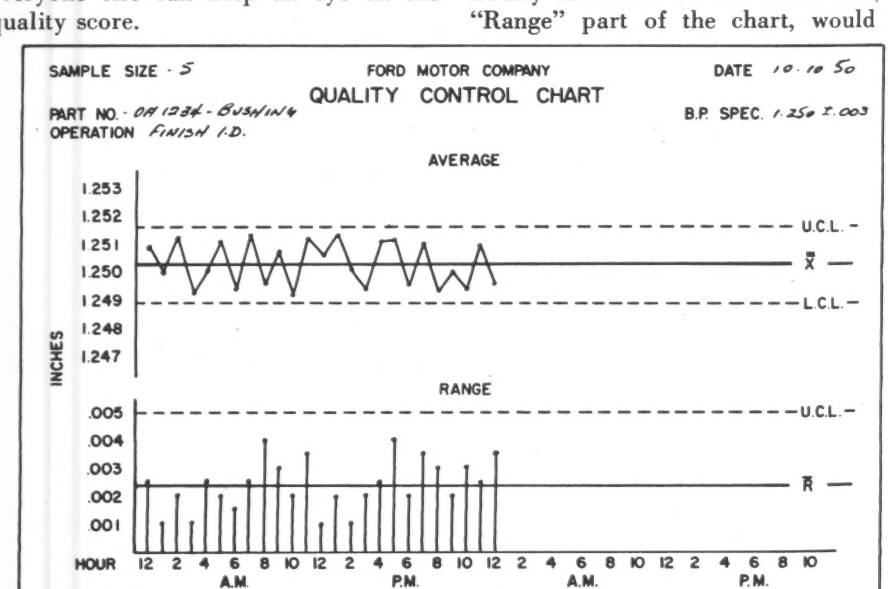


Figure 1

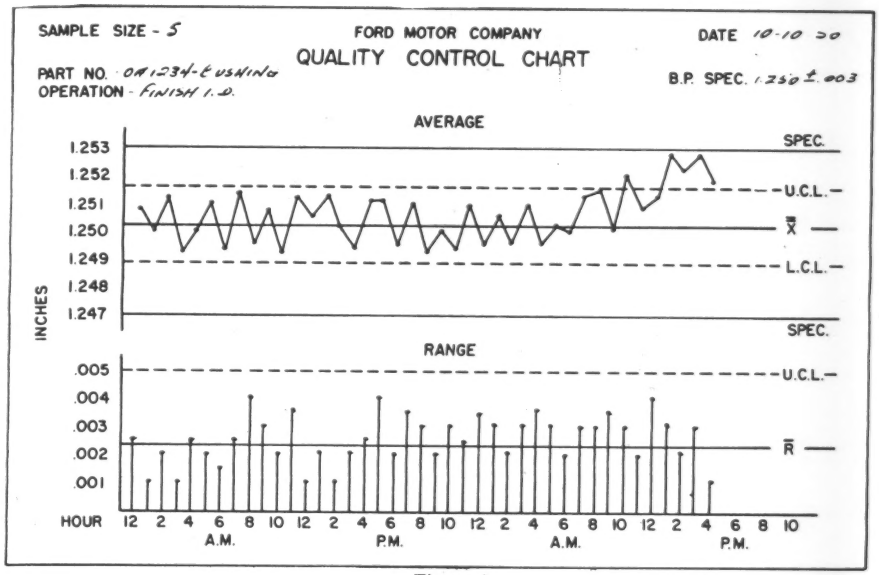


Figure 2

plotted every hour the *range* of values in the same *sample* of five pieces, or the difference between the least and the greatest values in the sample. After a history of perhaps twenty-five such hourly samplings of five pieces has been acquired we are ready to compute control lines representing the dimensional boundaries within which the process is currently able to perform.

This is where the statistics come in. By the use of simple formulas, the upper and lower control limits for both averages and ranges can be easily computed, and the values drawn on the chart (see Fig. 1). These limit lines, U.C.L. and L.C.L., have a truly amazing property which the statisticians had particularly in mind when they developed the control formulas, namely this: If the process does not suffer any change, in other words if it remains *normal*, then the statistical chance that a single plot point will land outside an upper or lower control limit is actually only three in a thousand. For all purposes then, the hourly values for averages and ranges would continue to fall inside their respective control limits only as long as the process remained normal. Conversely, if the plot points were to drift and finally fall outside a control limit then some factor would obviously be at work to change the process from normal to abnormal. The influences or factors that cause the process to depart from normal are called "assignable causes," and it is only in the detection and remedy of these that quality control becomes a reality. This requires particular emphasis; *it is only in the detection and remedy of "assignable causes" that quality control becomes a reality!*

Another line, "$\overline{\overline{X}}$", or average of the averages, is added to the upper half of the chart in Fig. 1. This value lies exactly midway between the upper and lower control limits, and has the purpose of serving as the center line for the normal process.

Nothing has yet been said about the actual blue print limits. These are, of course vitally important, but only as they relate to the upper and lower control limits on the process average. We prefer not to draw the blue print limit lines on the Control Chart, inasmuch as they tend to confuse, but rather place them in a data box at the top of the chart. For the sake of explanation, however, we have shown how they relate in the example (see Fig. 2).

Suppose now, successive samplings show the process to be departing from normal. The Control Chart should reflect this condition (see Fig. 3). Four things can be observed:

(1) The process has proven itself capable of operating safely within blue print limits.

(2) The process has gone out of control on the upper control limit of the "average" section of the chart.

(3) The process is starting to make actual rejects, since the sample average values fall very close to the upper blue print limit.

(4) An assignable cause or group of assignable causes is in operation which unattended will probably result in many rejects during the hours immediately ahead. Immediate action must therefore be taken if quality is to be controlled. If this action does not immediately follow, it is quite likely that the condition reflected in Fig. 3 would result, and that a very large portion of the parts being produced would be defective.

Control Charts are really only the tools for quality control, tools which indicate the beginnings or existence of unsuspected trouble. The solutions for the quality problems thus revealed lie not in the Control Charts but in the steps taken by an alert manufacturing organization to avoid trouble. If inspection's effort is not to be wasted, manufacturing must seek out and correct the "assignable causes" before they get out of hand. Meantime the charts continue to keep the score on quality, and reflect the extent to which corrective measures are effective.

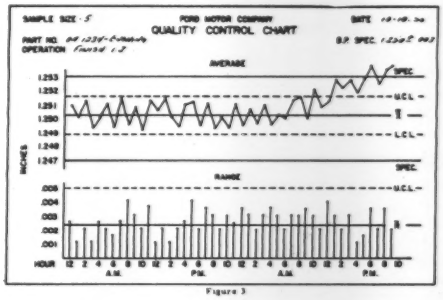


Figure 3

Our example speaks of an out of control condition in the "averages" portion of the chart. Ranges, too, can reflect the beginnings of trouble since they describe the variation between individual measures in each five piece sample. For this reason the process must be satisfactory both in respect to ranges and to averages before it can be felt that the situation is completely in control. An out of control condition on ranges calls for the same kind of follow-through on the part of manufacturing as does the out of control condition on averages. Each is an equally important element in the control of quality. Observe, also, that the $\overline{R}$ line on the chart represents the average range of the process. Its function is analogous to that of the $\overline{\overline{X}}$ line, inasmuch as it represents the average range of the normal process.

SCORING QUALITY ON ASSEMBLY LINES

Applications in assembly operations at Ford deal generally with "Percent Defective" or "P" Charts. Limit lines may or may not be used on these "P" Charts, depending on the purpose for which the charts are designed. Inasmuch as we are mainly interested in reducing the percent of defective assemblies to near-zero, the use of upper and lower control limits may actually de-emphasize the need for quality improvement. It is for this reason that many of our "P" Charts, including the example, do not carry upper and lower control limits.

The example in Fig. 4 shows how chronic defects are plotted as percents, based on hourly production. Observe that this is not a sampling plan but that it results from an actual tally of every vehicle, good or bad, as it passes the inspection station. The chronics are varied from time to time as old problems are solved and new ones arise. Overall charts are also developed which reflect the percent of OK units and the average number of defects per unit on either an hourly or a daily basis. The latter are known as "C" Charts.

Purpose of charts such as these in assembly operations is to keep the score on quality. Although they are no great statistical innovation, they meet the all important need for getting quality information to the people who can do something about it. As such they contribute importantly to the Ford program for top quality. Like the "$\overline{X}$ and R" Charts they are posted adjacent to the operations which they describe, and are of a size which permits recognition of quality level at distances of many feet.

CHARTING INCOMING MATERIALS

The applications of Chart Control in sampling the quality of incoming materials make use of the same basic statistical laws but in a somewhat different way. To inspect every single part in every incoming shipment would be prohibitive. Therefore, the statisticians have developed sampling tables which can be used to check shipments for compliance with acceptable levels of defectiveness. The size of the sample depends entirely upon the size of the shipment, and the decision to accept or reject a shipment is then dependent upon the number of defectives in the sample. Limiting values for the number of defectives allowed in the specific sample are set forth in the sampling tables, and are varied according to the actual degree of defectiveness which the user can afford to absorb.

For instance, where safety or operating properties are involved, we are likely to require very high quality levels. Conversely, where exact adherence to specification makes no significant difference in the function or appearance of the part, our requirements can be less rigid with no adverse effect. The tables are therefore arranged so that selections of "quality degree" can be made. This is done in the interest of realism and economy, without in the least endangering the statistical soundness of the sampling method or the reliability of the product. Simple to use, the sampling tables offer the advantages of minimum inspection for maximum quality protection. They permit the more effective use of inspection manpower, and because they are completely methodical, the inspection results can be plotted on percent defective charts at regular intervals for performance review. The quality trend charts (see Fig. 5) then become vital instruments in the detection of rising quality problems in "receiving" parts and in measuring the extent to which the suppliers are effecting corrections in their own plants. As in the case with other Control Charts, it is largely a matter of getting the quality information to the people who can bring about the improvement in quality. No amount of haphazard though very earnest effort can have the continuing effect of quality trend charts in this regard.

These are the general areas in which statistical methods for quality control have been employed at Ford. We do not hold that Chart Control is a cure for all the quality ailments to which modern industry is susceptible; nor is its effective use restricted only to high volume operations. The technique is, of course, most easily applied where there is continuity in the process, but the applications in American Industry are already so diverse that there seems to be no industrial activity which cannot benefit by its consideration.

SORTING OR IMPROVING?

It is also found that many jobs are of such consistently high quality that any effort for quality improvement would pay very small dividends. On jobs such as these we would not propose Chart Control. We do propose, however, that any manufacturer who finds that his scrap and rework losses, his customer warranty claims, or his product quality leave something to be desired, should look critically at his inspection set-up. If inspection is an orphan organization which deals only in the sorting of good material from poor material and in the creation of quality panic, then the enterprise is hardly keeping pace with the times. More and more firms are moving into this relatively new field of Chart Control. They like it because every single quality check is part of a plan for product quality

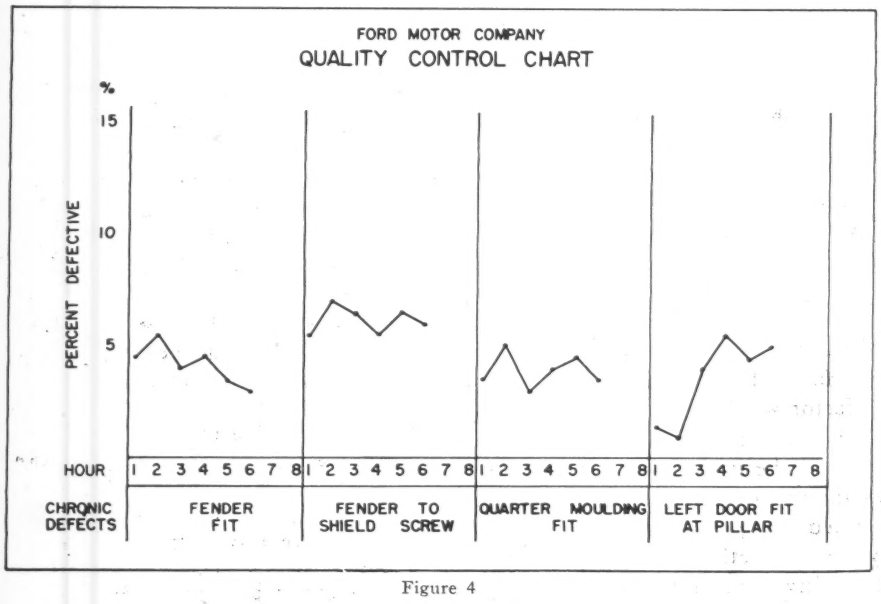


Figure 4

improvement. Each rejection is a valued fact in their quality experience which immediately goes to work in the prevention of further rejections.

We know of no more apt and immediate application of experience to the solution of industrial problems than that which is found in Chart Control. It offers too much in plain dollars and cents to permit off-handed dismissal by either the big firm or the smaller one. Failure to search its possibilities is no less serious than failure to study the latest developments in foundry practice, in machine tooling, or in rolling steel.

Although there are some 14,000 chart control applications in machining, processing, assembly, and receiving operations at Ford, we are still in the expansion stage of the program, with much yet to be accomplished. Seeking quality gains on an even wider front, the Ford Motor Company has engaged during the past year in a program for the promotion of quality mindedness in supplier plants. Such parts of the above-mentioned employee promotional programs as might have application were made available to the vendors for their local use. In addition, hundreds of major suppliers were offered the services of the Ford Training Department at Dearborn in acquainting their key production and inspection people with Chart Control. The Company has also made available the consulting services of the Quality Control Staff in order that interested suppliers might have assistance in exploring the potential in their own plants.

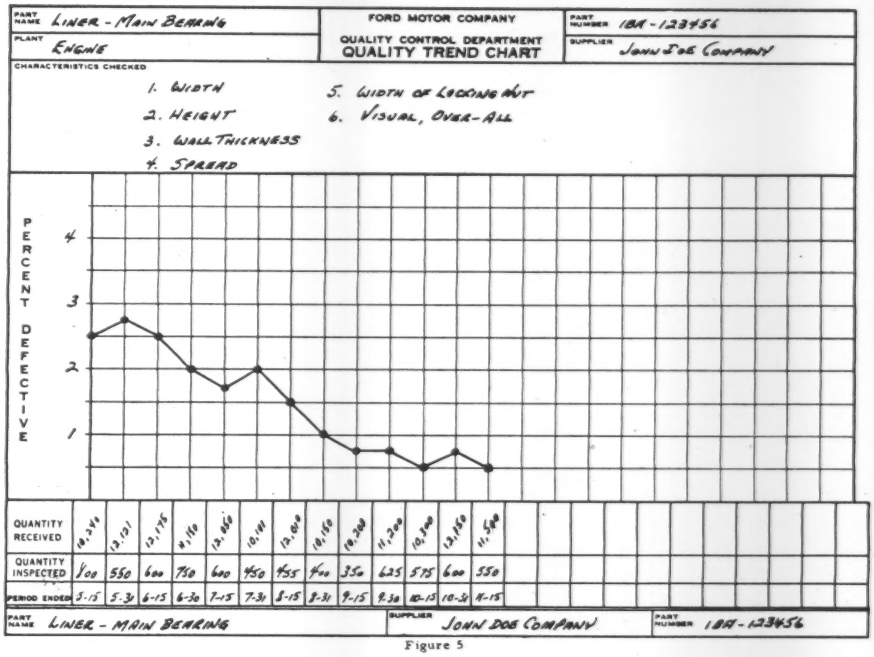


Figure 5

Final result of this work with the vendors will be "Quality Certification," a contractual arrangement wherein the vendor gives documented assurance that the quality level of each shipment meets prescribed limits of defectiveness. The first such Quality Certification agreement with a vendor was just recently negotiated, and hundreds more will be developed as more and more Ford suppliers adopt such methods for quality control as will permit reliable certification of quality. Ford receiving inspections will then be in the nature of quality audits, performed for confirmation of the vendors' continued adherence to the contracted quality requirements.

There is little that need be said about the total result of an aggressive and effective quality control program. Even in a producer's market, the public measures product value in terms of dollar's worth. It would seem prudent then, to adopt methods which insure that the quality potential of the product is fully realized. This can only be done through a down-to-earth approach in which quality improvement is more than an unemphasized employee responsibility and an unimplemented management desire.

"Reprint Bestsellers"

The following reprints are available, subject to prior sale. Each article on this list has been reprinted, some of them several times, in response to steady demands for copies from management men all over the world.

A. What makes Successful and Unsuccessful Executives? By Burleigh B. Gardner, Executive Director, Social Research, Inc., Chicago, 1948.

B. Human Relations in Industry: A Challenge for Free Enterprise, "Industrial Relations and the Social Psychologist." By Dr. Douglas McGregor, President, Antioch College, Yellow Springs, Ohio.

C. Resistance to Change—Its Analysis and Prevention, by Alvin Zander, Research Center for Group Dynamics, University of Michigan.

I. Management's Common Denominators by Jackson Martindell, President, American Institute of Management.

J. Line and Staff—Their Roles in the Organization Structure, by J. K. Louden.

Order Coupon

SOCIETY FOR ADVANCEMENT OF MANAGEMENT

84 William Street, New York 7, N. Y.

Please send_____copies of the following reprints

_____at 25¢ each,

(Please indicate letters from above list)
(or 5 for $1.00).
Enclosed find check (or money order) for $_____

Name_____

Address_____

_____

I am (am not) a member of S.A.M. (1150)

Executive Development Through Colleges and Universities

By EARL G. PLANTY
Executive Counselor, Johnson & Johnson

and DR. C. K. BEACH
Professor of Industrial Education, Cornell University, School of Industrial and Labor Relations

and GORDON VAN ARK
Division Manager, Personnel Development
General Foods Corporation

A representative selection of short courses in the development of executive talent.

"Executives need increased breadth — vision beyond their own specialty." A Management Round-table group in session at New York University.

RECENT SURVEYS conducted by professional management organizations and private consultants reveal great interest in the subject of executive development. The reasons for this are obvious. The pressures of World War II prevented normal attention to growth and development throughout industry generally; our rapid technological progress in recent years makes return to study on the part of seasoned executives inevitable. The growth of governmental participation and authority in the affairs of business and industry, the strength of labor unions, the increasing educational level of young people obtaining jobs in modern industry, the extension of the concept of political democracy into industry and finally an ever strengthening emphasis upon human relations, all combine to make interest in executive development a deep and powerful one.

WHY SUPPLEMENTARY DEVELOPMENT?

In-plant training programs for supervisors and middle managers and, in a few instances, internal development programs for executives have partially met the need. However, some of our industries with fine developmental programs of their own are turning with increasing interest to the schools and colleges for supplementary assistance. There are reasons for this:

(1) Where development activities are undertaken within the plant, the operational pressures and tensions all too frequently intervene to upset the training schedule or at least to make tense and worried the individual who leaves his business office for a visit of an hour or two to the classroom.

(2) The University brings together men from a variety of occupational skills and industries, ranging in their business practices from old-fashioned and even reactionary to most modern. A variety of climates come together in the advanced management classes meeting on the University campuses, providing a stimulating and diverse environment not possible to obtain within a single plant.

(3) High level executives who are normally reserved and conservative in expression when taken away from the scrutiny of their associates sometimes participate more freely and profit more fully in the new environment.

(4) Academic men, guaranteed the security of their jobs, can deal with successful and sometimes overconfident executives as training men in their own plants might not be able to do. It is something like the prestige and power that attach to an outside consultant as against an internal advisor.

(5) Not every industry can afford to hire a trained educator or highly experienced training man to provide such development activities within its walls.

(6) Even where finances are available, men skilled in promoting human growth and development and able at the same time to deal with major business executives in

This article was prepared in response to a widespread demand for information about executive development facilities. The authors endeavored to present a geographic choice that would represent all sections of the country. The list is not meant to cover all such courses. For the most part it represents courses about which the authors have some personal knowledge.
Representatives of colleges, universities or institutes not listed here are invited to submit full information about their courses for use in connection with a complete listing which is scheduled for publication early in 1951.

their own language are not always available.

(7) The University has drawn together a variety of teaching specialists impossible to reproduce even in the best and largest of industries. On most of our campuses, representatives of all the disciplines whose skill and knowledge are involved in any problem are available on the spot and can be drawn upon easily and promptly to assist in a solution.

BROAD GAUGE APPROACH

Because the University provides some measure of substitute where plant executive development programs do not exist, and offers a very fine supplement to them where they are at their best, more and more business executives are asking what formal schooling is available to provide executive development for them. The following descriptive list of college and university programs in executive development attempts to answer this question.

In general the list has been confined to recognized schools and colleges, including primarily those programs that are truly of an executive nature, and that endeavor to develop broad administrative techniques or points of view rather than specialized occupational skills. There are abundant facilities to teach men accounting, sales, engineering, etc. But facilities to train top leaders in coordination, logical processes of thinking, and in human, social, political and industrial values and vision are scarce. Such programs have been listed below. Another factor in determining our selection has been the length of the program. Long courses or degree-conferring programs, however excellent they may be, have been omitted in favor of short programs, evening courses, or conferences which the busy executive may be able to fit into his all-too-vigorous schedule.

(1) THE ADMINISTRATIVE STAFF COLLEGE

Greenlands
Henley-On-Thames
Oxon, England

PROGRAM — Three complete sessions of twelve weeks are held in each year. The greater part of the work is carried out by syndicates composed usually of nine members, arranged as far as possible so that no two have had experience in the same field. These syndicates, or committees, investigate broad problems of great moment to industry. The syndicate chairman plans the investigation, leads his men through the work, presents the syndicate's final report to the group, and helps defend its position in the open discussion that follows. Courses cover (I) Comparative Administrative Structures, (II) Internal Organization and Administration, (III) External Relations, & (IV) Constructive Administration.

ADMISSION REQUIREMENTS — Candidates must be nominated by their company, public department, local authority, or trade union to whose service they will be expected to return. The college pays particular attention to practical experience and not to academic qualifications. Will admit small number of qualified overseas candidates. Men and Women are equally eligible.

COST — American Money — $560. Includes board, lodging, texts and tuition.

COMMENTS — Members are expected to remain in residence during the twelve week period. College holds no examination or awards no certificate.

(2) AMERICAN MANAGEMENT ASSOCIATION

330 West 42nd Street
New York 18, New York

"WORKSHOP SEMINARS" — Small discussion groups which devote three days to exploring, trading experiences and reaching conclusions on a single current major practice or problem. Each group is under the leadership of a chairman with outstanding experience in the subject matter. Where discussion lends itself, the chairman is assisted by others with specialized knowledge, intended for top executives. Several seminars conducted at same time.

ADMISSION REQUIREMENTS — Advance registration only with each seminar limited to 20 American Management Association members. Only one person from a company in any single seminar.

COST — Registration fee $85.00.

COMMENTS — To date seminars have been held in New York City and Chicago. Typical seminar subjects have been: Top Management Occupation and Control, Executives Compensative and Incentives, Men, Management and Organization, Measurement of Office Production.

(3) THE UNIVERSITY OF CHICAGO

The School of Business
19 South La Salle Street
Chicago, Illinois

"THE EXECUTIVE PROGRAM" — A two year evening school program designed primarily for college graduates with business experience at executive level. First year includes Accounting, Business Economics, Public Regulations in Business, and Statistics. Second year covers Problems of Business Management, The Human Organization of Business, Financial Management of Business Enterprise, Production Management and Theory of Management. Participants attend classes two evenings weekly. One half of the class session devoted primarily to lecture and one half to informal discussion of specific problems.

ADMISSION REQUIREMENTS — Ability to do graduate work, to make contribution to the program from business experience and occupancy of executive of junior position in business.

COST — Tuition $185.00 per quarter for two courses.

COMMENTS — Persons completing Program are awarded a certificate. College graduates receive Degree of Master of Business Administration. Graduates become members of Executive Program Club, which holds regular meetings of a social and educational nature.

(4) HARVARD UNIVERSITY

Graduate School of Business Administration
Soldiers Field, Boston 63, Massachusetts

"ADVANCED MANAGEMENT PROGRAM" — A 13 weeks full time program designed for top executives. Two sessions held annually. Case study method extensively used. Courses offered include Administrative Practices, Business and the American Economy, Costs and Financial Administration, Production Management, Marketing Management and Labor Relations.

ADMISSION REQUIREMENTS — Must hold top executive position. Number from any one company limited. Company sponsorship required.

COST — Tuition $800.00. Total expenses $2,000 to $3,000. Group lives together in college dorms.

COMMENTS — One of the first programs established for executive development. Over 1500 men have attended course. Program similar to the M. B. A. course at Harvard.

(5) LAKE FOREST COLLEGE

Lake Forest, Illinois

"THE INDUSTRIAL MANAGEMENT INSTITUTE" — Conducted in cooperation with Abbot Laboratories, Fansteel Metallurgical Corporation and Johns-Manville Products Corporation for experienced, capable men in positions of importance who need a broadening of their business-educational base to help them assume larger responsibilities. A four year evening program. Two semesters of 16 weeks each. Sessions meet three nights weekly for two hours. Topics included in program are: Self Expression, Human Relations, Industrial Economics and the Corporation, Managerial Logic and Methods, Purchasing and Marketing, Law and Industry, and Presenting Ideas to Management.

ADMISSION REQUIREMENTS — For experienced, capable men in positions of importance. Selected and sponsored by individual companies. Newly enrolled group limited to 27 members.

COST — Tuition approximately $55.00 per semester. Bill rendered by college to company.

COMMENTS — Illustrates how a small college and local industry can cooperate.

(6) NEW YORK UNIVERSITY

College of Engineering
University Heights
New York 53, New York

"EXECUTIVE ROUND TABLE" — A series of 10 to 12 one day sessions meeting weekly for executives at the "cabinet level." Issues receiving major emphasis are: Basic premises underlying the modern Industrial Society, defining the role of the Manager in that Society and defining the tools by which the Manager is to carry out that role. Staff discussion leaders supported by various specialists eminent in their field.

ADMISSION REQUIREMENTS — Limited to maximum of 15 conferees. Not more than two from any one company.

COST — Registration fee $400.00.

COMMENTS — Held at the Engineers Club, New York City.

(7) NORTHWESTERN UNIVERSITY

Graduate Commerce Division
301 East Chicago Avenue
Chicago, Illinois

"EXECUTIVES' INSTITUTE" — Proposed to provide short summer program in top management education for limited number of top executives or those in line for such positions. Case study method to be emphasized. Expected to open in summer of 1951. First summer made up of two separate groups of 20, attending three week sessions. Groups to be combined second summer for three week session. Planned that 20 companies will select and send two men each to first summer sessions.

Two courses to be offered for three hours daily, five days a week covering Top Management Policy and Administration and Managerial Responsibilities and their limits.

ADMISSION REQUIREMENTS — Must be sponsored by a business or industry. Age range between 35 and 40 with some flexibility.

COST — Cost of $1,000 to be born by participating industries. Fee includes all charges except meals.

COMMENTS — Groups to be housed on Northwestern University campus where course will be conducted.

(8) SCHOOL OF INDUSTRIAL ENGINEERING AND MANAGEMENT

OKLAHOMA INSTITUTE OF TECHNOLOGY of the
Oklahoma Agricultural and Mechanic College
Stillwater, Oklahoma

MANAGEMENT INSTITUTES for EXECUTIVES — Consisting of eight one day meetings, monthly from October through May. Institutes provide policy making officials with understanding of complexities of business. Aim is to broaden interests, widen imagination and deepen understanding. Meetings for 1950-51 cover: The Job of Management; Principles of Management; Managements Responsibility for Motivation; Communication in Industry; Organization Structures; A Study of Leadership; The Industrial Environment; Trends in the Nations Economy. Nationally known guest lecturers and conference leaders conduct the meetings.

ADMISSION REQUIREMENTS — For policy making executives.

COST — Company reservations accepted upon payment of $150 per entry. A few single registrations accepted at $25 for one day's institute. Luncheon provided; all else extra.

COMMENTS — Program for 1951 includes Chester Barnard, W. W. Finlay, Douglas McGregor, Edwin G. Nourse, Paul Pigors, D. H. Voorhies, and M. R. Lohmann.

(9) ORIEL COLLEGE, Oxford

Institute of Industrial Administration
England

"MANAGEMENT SUMMER SCHOOL" — A one week course concerned with the factors involved in General Management and the increasing of managerial effectiveness. Intended for persons moving into or holding managerial positions. Lecture each day followed by small group discussions under a tutor.

ADMISSION REQUIREMENTS — None stated.

COST — Registration and living expenses. $35.00. (as of July 1949).

COMMENTS — Sponsored by Institute of Industrial Administration, a society for the promotion of Education in the principles of industrial administration and their application.

(10) UNIVERSITY OF PENNSYLVANIA

Wharton School of Finance and Commerce
Philadelphia, Pennsylvania

"EXECUTIVE CONFERENCE ON COORDINATION AND POLICY FORMATION" — A two weeks course for senior executives and men moving into management positions. Policy formation and the integration of operations are emphasized through the areas of Marketing, Finance, Accounting, Production, and Personnel. Two or three topics are presented daily with provision for discussion following subject presentation by resident faculty or visiting specialist.

ADMISSION REQUIREMENTS — Conference group limited to approximately 25.

COST — Enrollment fee $500. including living and recreation expenses.

COMMENTS — Held during summer at University of Pennsylvania.

(11) THE UNIVERSITY OF PITTSBURGH

School of Business Administration
Pittsburgh 13, Pennsylvania

"MANAGEMENT PROBLEMS FOR EXECUTIVES" — Includes the areas of Administrative Practices, Personnel and Labor Relations, Marketing Policies, Industrial Management, Engineering, and Measurements for Management. Emphasis placed on research studies and case studies. Eight weeks in length.

ADMISSION REQUIREMENTS — No specific academic requirements. Candidates for admission must have dem-

onstrated leadership abilities in business. Attended largely by persons on department head level. Limited to 35 participants.

COST — Registration fee — $500. Living Expenses — $1000 to $1200.

COMMENTS — Established during Spring, 1949. Sponsored by Chamber of Commerce of Pittsburgh through an Education Committee.

(12) SOUTHERN METHODIST UNIVERSITY

Dallas, Texas

"THE INSTITUTE OF MANAGEMENT" — The Institute conducts conferences and seminars for all levels of management from executives to foremen and supervisors. Executive Management seminars consist of four one-day meetings throughout the year. Problems of concern to presidents, vice-presidents, or other top-ranking executives responsible for policy-making decisions. Staff Management Seminars three days in length and designed for middle management group.

ADMISSION REQUIREMENTS — For Executive Management Seminars admission confined to persons in top-ranking executive positions responsible for policy-making decisions. Staff Management program admits staff personnel such as sales managers, training directors, office managers, personnel directors, etc.

COST — Executive series $70. or $20. for each seminar. Staff Management Seminar series, $45.

COMMENTS — Held on campus of Southern Methodist University. Texas Manufacturers Association cooperating agency.

(13) UNIVERSITY OF TORONTO

273 Bloor Street, West
Toronto, Ontario

"MANAGEMENT CONFERENCE"—Of greatest benefit to persons in general managerial positions or those moving into such positions. A four weeks program with the conference and case study method extensively used supplemented by field trips and informal meetings. Areas given emphasis are Human Relations, Industrial Management, Marketing and Finance, Problems of Internal Control, and Problems of External Origin.

ADMISSION REQUIREMENTS — No formal educational requirements. Registration limited to 50 with responsible position and experience in industry or business given primary consideration.

COST — Fee of $350.00 covers tuition, living quarters, meals and essential materials.

COMMENTS — Held at the University of Toronto. Conference group lives together.

(14) THE UNIVERSITY OF WESTERN ONTARIO

School of Business Administration
London, Ontario

"MANAGEMENT TRAINING COURSE" — A five weeks program intended primarily for junior executives or men who can benefit from a management training program. Major emphasis is placed on Administrative Practices. Other fields of discussion and study include Marketing, Production, Finance, Controls, and Personnel Administration. Informal evening meetings are held on current economic, social and political environment of business.

ADMISSION REQUIREMENTS — No firm encouraged to enroll more than two men. Companies encouraged to send only experienced, successful junior executives.

COST — Course fee of $400.00 including lodging and meals.

COMMENTS — Case study method emphasized.

(15) UNIVERSITY OF WISCONSIN

Madison, Wisconsin
School of Commerce & Extension Division

"INDUSTRIAL MANAGEMENT INSTITUTE" — Executive Management Seminars consist of eight one day meetings throughout the year intended to provide a condensed analysis and discussion of major industrial problems from the stand-point of policy formulation. Leader presents topic and conducts discussion period. Maximum enrollment sixty-five.

One-Day Management conferences consist of series of six one-day conferences during year for various management groups such as plant managers, sales managers, purchasing managers, personnel managers, etc. Maximum enrollment, sixty-five.

Management Institutes three days in length and intended for executive department heads and staff management people. Designed to help management personnel keep abreast of latest developments in their specialized fields. Nineteen fifty-one program includes nine institutes in general management area and five institutes in technical fields. Maximum enrollment, thirty-five.

ADMISSION REQUIREMENTS — For Executive Management Seminars and person must be sponsored by an industrial organization which may send one executive to each meeting. Others may be admitted if space permits. No specific admission requirements for One-Day Management Conferences or Management Institutes.

COST — Executive Management Seminars $100.00 for series of eight or $15.00 for single session.
One-Day Management Conference — $75.00 for series of six meetings or $15.00 for single session.
Management Institutes — $35.00 per person.

COMMENTS — Most programs held at the Edgewater Hotel, Madison, Wisconsin. Manufacturers Association cooperating agency.

OBJECTIVES OF EXECUTIVE DEVELOPMENT

The writers believe that major executives can profit from help in four areas:

1. Mature executives can profit from an open-minded study of business-civic responsibilities. This involves a study of social values, functions of private enterprise, attitudes and viewpoints about people, profit, public, customer, and government. It includes executives' responsibility to their community, state, and nation, as well as a study of the place and responsibility of business in a free society. It includes an analysis of the growing intervention of government, the reasons behind this, and actions on the part of executives which may make a large part of government control unnecessary.

2. Executives need increased breadth — vision beyond their own specialty. The more successful they have been in some specialty like production or sales, the less sympathetic they may have become with other specialties and general problems of a broad, social, economic, or cultural nature.

3. Business leaders can profit greatly from a more objective knowledge of themselves and those they lead. This means an understanding of themselves and others as they act and react in a dynamic, competitive relationship. It includes more than the ability to handle people; it means handling one's self in relation to people. It means more than the generalizations and platitudes of the

Job Relations Course (JRT) or Dale Carnegie's gospel. The importance of more scientific attention to human relations is outlined in the following paragraph from R. W. Johnson, Chairman of the Board of Directors at Johnson & Johnson.

"It is important to note that for many years we have chosen our management from men who have been educated as technicians and specialists. Unfortunately the graduates of our great engineering schools and the products of our American universities were not equally well educated in the great science of human engineering. Recently it has become apparent that the greatest technical skill is worth little unless men and women can be persuaded to carry out the decisions essential to making that skill effective. We are now discovering that a scientific and technological understanding of a subject does not of itself develop or produce ability to lead large groups of people into enthusiastic day-in and day-out response. This means that we must have new managers — managers not only skilled in the techniques but equally well grounded in the field of human relations."

The skill which General Johnson speaks of can come, where it is lacking, most easily through non-directive techniques like role playing, case studies, counselling and psychiatric group work. Traditional methods of training and teaching are adequate to *re-inforce* the skill where it exists, but where it is lacking, lectures, telling and the conference method do not obtain much beyond a verbal lip service.

4. Executives, like all of us, need to be kept up to date in the rapidly changing technological and scientific developments in their occupation or industry, whether it be textiles, rubber, oil, banking, or law, production or labor relations.

In conclusion, it may be said that the educational services and institutions described above contribute in varying degrees to meeting the objectives which the writers consider paramount for most American business leaders. Companies or executives who seek growth toward any of these four aims: (1) open-minded attitude towards business-civic responsibilities; (2) increased breadth and vision beyond their own specialty; (3) improved human relations; and (4) orientation to changing occupational or industrial technology, may well rely upon the institutions and the programs described in this paper.

Proceedings of The Annual Conference of S.A.M.

Hotel Statler, November 3-4, 1949

A complete copy of all papers, including charts, delivered at the Conference. Contents:

Increasing Productivity Through Better Methods
by H. E. BLANK, JR., Editor, Modern Industry

Why Neglect Incentives?
by PHIL CARROLL, Registered Professional Engineer.

Management Looks at the Break-Even Point
by FRED V. GARDNER, Fred V. Gardner and Associates

A Fair Day's Work
by DENNETT F. HOWE, Director of Industrial Engineering, The Procter & Gamble Company

Better Quality is a Tool for Competition
by DR. JOSEPH M. JURAN, Professor of Administrative Engineering, New York University

Sound Human Relations—The Only Way to be Competitive
by J. WARD KEENER, Vice-President, The B. F. Goodrich Company

Revitalizing Sales in a Competitive Market
by EUGENE B. MAPEL, Vice-President, Methods Engineering Council

Decreasing Costs by Increasing Unit Sales
by DR. HERMAN C. NOLEN, Vice-President, McKesson and Robbins, Inc.

How Work Simplification Helped Improve Our Human Relations Program
by RAYMOND P. NORTON, H. P. Hood & Sons

Materials Handling: An Important Tool of Cost Reduction
by OTTO G. SCHWENK, Vice-President, Yale & Towne Manufacturing Co.

Managers and Cost Control
by HAROLD F. SMIDDY, Vice-President, General Electric Company

Organizing for Competition
by CLAUDE V. SWANK, Vice-President, Johnson & Johnson

Why More Industrial Engineers Don't Get Into Top Management
by BRUCE H. WALLACE, Vice-President and Treasurer, Otis Elevator Co.

The Business Outlook
by CLOUD WAMPLER, President, Carrier Corporation

Order Coupon

SOCIETY FOR ADVANCEMENT OF MANAGEMENT

Please send me.....copies of the Proceedings of the 1949 Annual Fall Conference (November 3, 4, 1949).

at Member's Price, $3.00 each, at Non-Member's Price, $5.00 each

Enclosed find check (or money order) for $.....

Name .....

Address .....

Make checks payable to:

SOCIETY FOR ADVANCEMENT OF MANAGEMENT,
84 WILLIAM STREET, NEW YORK 7, N. Y.

(1250)

Personalities in Labor-Management Conflicts

By A. A. IMBERMAN
Imberman & De Forest

Some highly individual thoughts about human relations, communications and the social status of labor leaders.

THE LAST 25 years will have an instructive interest for future anthropologists. The period will probably be hawked about in textbooks as the *Beginning of Human Relations in Industry*. Whereas 25 years ago the National Association of Manufacturers was feverishly popularizing new techniques designed to impede unionization, today, as one sweeps the eye over the land, it is evident that many industrialists seem to concern themselves with improving "human relations practices" in their plants—on the theory that curtailment of employee grievances would remove the necessity for unions.

It was only after the Wagner Act of 1935 [2] and after the union boys had put up their dukes, that industrialists realized it was not only illegal but unwise to snort and froth openly at unions. Human relations in industry then became the popular device of many employers to wean employees from their union. The effects, industrialists were told, would be instantly visible. How successful this attempt has been, is debatable.

For years, International Harvester has sweetened its industrial operations with one of the most thorough-going human relations programs ever practised in any industry. Visiting personnel directors and other dignitaries from remote outposts found the scope of this program truly amazing. Nevertheless, on August 29 of this year, Robert M. Lewin, authoritative labor editor of the *Chicago Daily News,* totaled the number of strikes by Harvester employees and wild cat stoppages inflicted upon Harvester since October 1947. The round figure was 560.

The other case is that of Ford Motor Co. After years of resisting union organizers, the company switched to a beneficent acceptance of the union — including the checkoff which made so many other companies gag. Nonetheless, Ford has been plagued by strikes and stoppages ever since. Despite the fact that Ford instituted a new department aimed at carrying out the best human relations practices, this seems not to deter Ford employees from striking as often and as exuberantly as employees of other companies in the same industry which did not institute any wholesale human relations programs.

THE "WEDGE" TECHNIQUE

From many sides today may be heard the rallying cries of industrialists, personnel directors, management consultants—men of the highest measurable sobriety—urging an improvement in human relations practices in industry. The suggestions offered are diverse, and if I may strip the process of its plumes and spangles, the actions are often inspired by an attempt to escape from recognizing a union, or to undermine an established and duly recognized union.

To argue that human relations programs are never successful in weakening union sympathy, would war on common observation. That such tactics are occasionally successful for a period of years, is also familiar. But there are disadvantages.

I know at least six instances in which employers attempted to turn the full force of the Wagner Act by developing human relations programs. These were really designed to influence employees to join gilded and frescoed company-dominated unions—so that there might be no room for an outside union. Without an inordinate strain upon the credulity, it is hard to believe such things were true. But they were.

Most all of these efforts were successful—for a time. The company union was depicted as the only palladium of peace, justice and plenty—but it required so much management time, effort and expense to manipulate the affairs of the dominated unions, to ferret out any employees debauched by outside reading and dose them out of the black bottle—that the elephantine effort was finally abandoned by four of these companies. They finally accepted outside unions.

In the fifth instance, the leader of the company union broke away and acted as if his were an independent union. He now calls the tune as rigorously as if he had an international behind him. Only in the sixth instance was the company union successful, and there only at the price of paying wages 15 per cent above union levels, and "fringe" benefits at least equal to those in union plants.

In all the endeavors—whether to cold shoulder unions, or to minimize the influence of unions — human relations have been an integral part of the package. An overwhelming accumulation of facts indicates that human relations programs in plants have proven highly advantageous—but only in the same sense that good lighting, cleanliness and good inventory controls are advantageous, and have been profitable in that they eventuate in more production, more willing production and more stable production. But despite the weighty gabble of sweating publicists and the really stupendous erudition which seems to have been pumped into this field, human

---

Adapted from a paper delivered at Fourth Annual Industrial Management Conference of the University of Missouri, November 2, 1950.

[2] Ratified by the Supreme Court in 1937 *(NLRB vs Jones & Laughlin Steel Corp.)*

relations programs have had little or no influence upon workers' ties to their union.

The emphasis today among the advanced thinkers of industry is upon better "communications" within plants, and one gathers the notion from the barbarous jargon in which some of these theories are couched, that if communications within plants were improved, employee ties to their company would be stronger, and by the same token, employee ties to their unions would be busted. However, at least one skeptic at the ringside fails to find this true.

In later years, since 1941, there has been a burgeoning interest in employee opinion polls in an effort by executives to improve the one-way (from management down) communication system. These employee polls or "morale surveys" have achieved a high degree of scientific exactitude in the hands of such able practitioners as *George Gallup, Burleigh B. Gardner, Robert N. McMurry, Claude Robinson, Elmo Roper, Elmo C. Wilson.* Today, many an executive goes in for employee polls with only an occasional tremor of trepidation, hoping that careful documentation of employee opinions will be of value in management's effort to block union exploitation of worker grievances.

While this first justification for employee polls has always been spoken of with delicate prudence in executive circles, some experience indicates that such stimulating and alive information as has been derived in this manner and reported to management, has not blocked union growth at all—but has proven valuable in other respects. It hooked up cause and effect with clarity; it has given managements insight into the salty character of employee thought and grievances which, when corrected, helped in gaining better production, more willing production and more stable production from employees. But morale surveys seem to have had virtually no effect on deterring unionization of employees, or undermining their loyalty to unions.

It may be of interest at this point to consider why the human relations practices and these newer communication devices have had such little effect on stemming the underlying drift towards unionization.

ROOTS OF UNION TREND

If we stroll down the assembly lines of tractor plants, radio assembly plants, auto factories, shoe plants, and almost every variety of large industrial establishment, we discover that what was once the gaudy treasure of the workman—his recondite and indescribable magic, his workmanship, his *skill*—has now been broken up into a series of perfumed and denatured tasks, a compound of trivialities, all of a simpler, semi-skilled and low-skilled variety. These require few aptitudes, give the worker little craftsmanship or experience which he can transfer to any other job or industry, and fill his ego with no particular glow. The pride which was once characteristic of a man's skill, has now been transferred from his own work to the work of the factory.

By the same token, his employability and pay-scale which were directly related to his skill and craft, have been undermined as his work has been subdivided. A man who works on a radio assembly line, for example, isn't an electrician, or a carpenter, or a cabinet maker—but a solderer. As such he has little skill he can take with him if he were laid off. He is nothing but a solderer, and can only solder two or more pieces of metal together. His chances of advancement have been similarly cramped. After all, how skilled can you get at soldering, and where can you move to?[3]

That has become true of the workers in many large industries throughout the country. As year chases year, the hierarchy of industrial class and workers' status has been slowly undermined. Everywhere an assembly line operates, the results are generally similar. The ultimate effect is that:

> ". . . workers have forgotten their pride in their separate jobs, have dismissed the small differences among them, and have united in industrial unions with tens and hundreds of thousands of workers throughout the country combining their strength to assert their interests against management . . . In such a social setting, strikes are inevitable . . ."[4]

The rise of *industrial* unionism coincides with the withdrawal of opportunities and skills from workers. The growth of industrial unionism is some evidence that the free enterprise system has ceased to give the craftsman and worker what they want and they have in many instances, turned for salvation to the power politicians and the union leaders.

In part, it is true that since 1933 our federal administration has carried on a more or less blushful flirtation with workers and their unions. But the guarantee of union freedom which finally gained place in the Wagner Act and was reaffirmed in the Taft-Hartley Act was no child of political accident. It was derived from sociological understanding and workers' vague yearnings for security in a world they did not make.

The truth is that the typical semi-skilled worker feels that the conditions of his employment, his wage scale and take-home pay, his seniority and skill are all taken out of his hands by technological trends which he does not understand. Is there any reason to believe that better human relations practices in industry or that improved communications devices will settle the fears of his earthly clay and create such a confidence in his mind that he will look solely to his employer for protection against the technological forces which neither one of them can block? To believe that he will is sugarishly sentimental; all the evidence on the growth of unionism indicates that he will not.

Psychological studies of typical workers and their wives indicate that they lead fairly well-confined lives without too much venturesomeness or daring.[5]

It is a curious, melancholy and gruesome fact that the typical, lower middle class semi-skilled worker is always on the brink of insecurity, and since he lacks whatever security a skilled trade might give him, it should no longer be conceived as strange or even un-Ameri-

---

[3] The latest discussion I have seen of this problem appears in Harry Ober's "The Worker and His Job," *Monthly Labor Review,* July, 1950, pp. 13-22. The most erudite and satisfying discussion of the whole problem is *The Social System of the Modern Factory,* by W. L. Warner and J. O. Low, Yale University Press, 1947.

[4] W. L. Warner and J. O. Low, *op. cit.,* p. 175.

[5] I am indebted here to the unpublished studies by Social Research, Inc., of middle-class employees and their families—particularly on how their psychological outlook relates to food and house furnishing advertisements.

can that he should turn to the union for aid and protection. I do not believe that anyone today examining the industrial scene realistically and soberly, can come to any other conclusion.

If such is the situation today, and if human relations and improved communications devices in industry are of little value in influencing unionized employees, how then can employers get the sympathetic ears of their workers?

LEADERS AS INDIVIDUALS

I have suggested elsewhere, perhaps ineptly and grotesquely, that the only realistic recommendation which can be made on this score is to encourage employers to get to know union leaders socially, to work with them on a face-to-face basis free of legal interlocutors, to accept those labor leaders as equals, and to deal with them as such.[6] Since union members look to their union leaders as their own fathers, mothers, partisans, spokesmen, benefactors, and the heralds of ethical enlightenment, the surest way to influence union members is to influence their leaders.

Since I had made that suggestion in print, many an industrialist has told me that it was a raiser of goose-flesh, and I have been deluged with letters from corporate executives arguing that it requires a racking stretch of their character to bring themselves to meet labor leaders socially. The nature of the average union leader is such, I am told, that honest, sober, pious and respectable business executives would not be seen in their company in public.

Elaborate inquiries and long mediation have convinced me that a fair number of labor leaders are honest men. What the proportion is, I do not venture to guess. But in my own associations with corporate executives I have also learned that not all of them are noble and upright citizens, the delight of the heavenly hierarchy.

I am disposed to think, however, that it is not the alleged base character of labor leaders which makes social intercourse with them so difficult for employers.

The real difficulty is something which few employers talk about, and even these few men are fairly inarticulate because the point touches a sensitive spot. Stripped of irrelevancies, the real hurdles are those complicated and onerous class taboos which tell all of us how to behave in society.

For example, the typical business executive regards himself as a man of vast and ineffable superiority which he may be. He peers down upon the union leader who represents his employees, or any segment of them. In the executive's eyes, the union leader, if he represents shop labor, is on a par with shop laborers; if he represents the truck drivers of the company, then the union head is the equivalent of a truck driver; if the union boss represents maintenance workers in the plant, then he is a sort of janitor himself, or on a par with them. To ask an employer to invite such a man for a social luncheon at the employer's club is enough to shake some of the faithful; to bid an employer to invite the union leader and his wife over to the employer's country club dance, or over to the house for a drink or a rubber of bridge is to subject that employer to being arrested and blistered by all right-thinking minds of his community. Yet it is difficult for any American to say this, since part of our credo is that all Americans are equal. The truth is, as our social anatomists have pointed out, "all of us are equal, but some are more equal than others." [7]

INDUSTRIAL AND SOCIAL STATUS

It may not be too far-fetched for me to suggest that labor leaders are not employees; in every respect but one they are equal to business executives. They have large incomes many of them; they have influence, and they have power which they exert with gusto. They control and direct the destinies of hundreds and thousands of men and women in their unions. A labor leader who controls say, 25,000 men, has a not inconsiderable sense of his own importance, probably no less than an employer with an equal number of employees. But, the labor leader has no *social* acceptance. Despite his wealth and power, the fruits of his position are denied to him. Anywhere he goes outside of his circle, he finds only a depressing inferiority, only a chilling half-welcome. He cannot belong to good clubs; he cannot have his family (and particularly his children) attend private schools without snide comments from other children (and mothers); he is made to feel unwelcome in anything but a middle-class neighborhood; newspapers generally treat him editorially as something satanic — all or mainly because, employers set the major culture patterns of our American civilization, and employers have no use for labor leaders.

The whole outlook of our culture—as far as union leaders are concerned—stems from the employers' point-of-view. As the Latin tag used to put it, *cujus regio, ejus religio*: the Lord of the land determines its faith.

In (conscious or unconscious) retaliation, many of these labor leaders indulge in strikes, arbitrary demands on working conditions, capricious demands "to see the company books," etc. Those who do not use such tactics to harass employers, fall back on other demands which can only be met by bribery as a regular practice. In either event, many of these labor leaders feel deeply that employers purposely hold them down, and they (consciously or unconsciously) strike back. In the union leaders' professional deliberations *in camera*, this desire for retaliation crops up quite clearly in their unpremeditated outpourings—at least it is often clear to an unbiased observer; and in a good number of instances is responsible for the sort of conduct to which employers object, overlooking, or perhaps not aware, that it is employers' ostracism which is the origin of the labor leaders' desire to strike back.

During the war (World War II) there began to be an increasing acceptance of labor leaders as men to be regarded highly in their own right. At the height of the war, labor leaders were medicated, massaged, fed and feted by employers. But after V-J Day this tendency was dismissed as an uncouth novelty.

Now, under pressure of a defense program, we find again that business leaders are once more tolerating and even accepting union leaders.

In this connection some psychological comments about business executives might be *apropos*. The original researches of Dr. Burleigh B. Gardner and Professor William E. Henry on success-

[6] "Labor Leaders and Society" by A. A. Imberman, *Harvard Business Review*, January, 1950, pp. 52-60, discusses the characters and habitual modes of thought of 249 labor leaders from 42 unions.

[7] *Social Class in America*, by W. L. Warner, Marchia Meeker and K. Eells, Science Research Associates Press, 1949, p. 4.

ful and unsuccessful executives throw considerable light on the psychological feelings of employers towards other men.[8] In the main, whatever other characteristics are buried in the psyches of successful executives, they habitually regard their subordinates and employees as persons whom they have outgrown, as people in whom they have no personal interest. They do not mean to be unkind. The successful executive looks upward not downward; he regards with respect the men who are more successful than he. This very virtue, festering within him, tends to give him his drive to achieve more, and move upward himself. He is neutral to those below him. Since union leaders are associated in his mind with those below him, the successful executive—as we know him today—merely tolerates the union leaders with whom he deals. He has no respect for them, and since he does not want to emulate the labor leaders he has no social traffic with them.

SIGNS OF THE FUTURE

However, as I move around the country meeting business executives and union leaders, I find two developments of interest here.

(1) In many instances of the large national corporations with branch plants operated by branch managers, it is evident that the local manager, particularly in smaller cities, has come to regard the local union leaders with deference, and in some cases to hobnob with them socially. Only three weeks ago I was told by a plant manager in Indianapolis that he was preparing to leave on a fishing trip with a good friend of his—the business agent of the union of his plant. When he said this in the presence of about a dozen other executives, there were no hoots of derision as there might have been 10 years ago, and certainly no feeling of his warring upon every rationality that employers cherish, as there might have been 20 years ago. Neither did anyone at the meeting think he ought to be drummed out of the Chamber of Commerce.

(2) While many of the branch officers of the large national corporations seem to be drifting in this direction, the trend is not true of the top officials of the national companies themselves and not true of the heads of many medium-sized companies. These men are, or at least most of them are, rugged individualists. They are forceful men in business, in politics, and in many other activities including the connubial and convivial. They are accustomed to making their own decisions and forcing their way through the difficult situations. Compromise is not their habitual or even occasional mode of thought, and the idea of meeting a labor leader half-way is abhorrent.

The hopeful sign in the present situation is that the second tier of business executives of large corporations—the vice presidents, the assistants to the president, the department heads—in short, the top executives *of tomorrow*, seem to be accepting labor leaders, although the bossman himself cannot overcome the thought and habits of a lifetime, and hence finds himself too uncomfortable in such a situation. The earnest convictions of their younger years are the policies of today.

But the younger men in executive staffs today, with occasional genuflexions towards the home office, are evidently learning that these human relations and communications devices are useful only as production encouragers, not as methods which have any sizeable effect upon employee loyalty to their unions. Moreover, these younger men are also learning that there is no point in swathing the bitter facts of industrial life in soft illusion, that there is only one way to burrow underneath the skin of union members and that is through the union leader. Hence we may see more and more of industrialists' acceptance of labor leaders in the next decade.

Of course, this must be coupled with human relations practices within the plant, better communications and with the proper public relations devices which speak the language of the lower-middle class employee and his wife.

The mere sough and blubber of words—in much of the so-called public relations campaigns and advertising aimed at selling the free enterprise system—and carrying ideas which are meaningful mainly to upper-class people, are often not only wasteful of time, money and energy, but in some cases create labor-management antagonism because of misunderstanding.[9] Here too, re-examination and re-direction of many of these campaigns would buttress management's position not only with labor leaders but with its workers who, in the last analysis, are the people management is interested in reaching.

---

[8] "*What Makes Successful and Unsuccessful Executives?*" by Burleigh B. Gardner, *Advanced Management*, Sept., 1948, pp. 116-125. "*The Business Executive: The Psychodynamics of a Social Role*," by William E. Henry, *The American Journal of Sociology*, Jan., 1949, pp. 286-291. "*Personality Evaluation in the Selection of Executive Personnel*," by William E. Henry and Burleigh B. Gardner, *Public Personnel Review*, April, 1949, pp. 67-71. "*Identifying the Potentially Successful Executive*" by William E. Henry, in *Personnel Series No. 127*, American Management Association, New York, 1949.

[9] The article "*Communication: Is Anybody Listening?*" in *Fortune* (Sept. 1950) is perhaps the best marshalling of general criticism in this field.

Make your plans NOW for the

SIXTH ANNUAL TIME STUDY and METHODS CONFERENCE

"The Outstanding Industrial Engineering Event of the Year"

Remember these dates: April 19 (Thursday) and April 20 (Friday), 1951,
at the Hotel Statler, New York City, N. Y.

Economic Puritanism, Fact or Fiction

By PAUL M. MAZUR
Partner, Lehman Brothers, Bankers

Can "oversaving" decrease the velocity of money to a danger point? A candid view of principles opposed to practice.

NOT LONG AGO, I heard a friend of mine — a really outstanding merchant—give a talk. In it he analyzed the statistics of retailing of both hard and soft lines. He concluded that the present relatively unsatisfactory level of soft goods sales volume was due not to the high level of hard lines sales (autos, refrigerators, television, etc.), but rather to the very high level at which Americans were saving their earnings. He added that merchants of soft lines were unsuccessful in making women sufficiently discontented with their styles to convert dollars into clothing. He aptly referred to retailers as "merchants of discontent"—and spoke of the danger in our economy of using mere utility as a basis for consumer needs, desires, or demands.

Probably the best method of determining "real" wages is to measure and compare the length of time the average worker must labor to provide his family with its needs and some of its desires—its necessities and luxuries. By such a measurement, the average American has truly performed a production miracle and benefits by the productiveness of that same miracle. Whether the product be a loaf of plain bread or a rich cake, the time an American must work for that product is low indeed. For the average worker outside of America, the radio, of course, is a difficult prize to win by hours of labor, television more difficult, if at all possible, and the automobile practically impossible.

The protest against this "profligate" point of view was considerable. It was said that the Puritan lessons and maxims of thrift and prudence were being prostituted.

For years I have, on various-occasions, written and spoken about the American economy in terms of what I believe were its facts. Recently, I spoke of the danger of too much thrift and of the need of quickening the speed of raising the American standard of living if we are to keep our factories busy and our men and women prosperously employed producing peacetime products. Like my merchant friend, I too, was denounced by those who are Puritan-minded in their economic thinking, those who found in my words, or rather *some* of my words, removed from their context, an advocacy of hedonism and a denial of the proper economic principles of our Puritan progenitors.

There is, it seems, a vociferous group of economists or commentators who stigmatize any departure from the dour economic ways of those who landed at Plymouth rock, with the same fury with which the W.C.T.U. preaches the impiety of rum and the perfections of prohibitionism.

Do those who attack my merchant friend and myself find fault with our economics, or with the fact that we speak out in meeting? Is it our economics that are involved? Or is it that we *present* economic analyses which, though valid, run counter to Puritan principles?

PRECEPT OR PRACTICE?

Many foreign observers have commented upon the indelible stamp which the Puritan Fathers left upon our culture, our morals, and our manners. But they find more of this Puritanism in our ethics and rather less in our conduct. They believe that we are far more moral in our precepts than in our practice. In fact, they sometimes assign to the contradiction between our social fact and fiction the brutal word "hypocrisy."

Does that same variance between fact and fiction exist in our economic practices? And, in the analysis of that "dismal science" of economics, as it applies to the United States, are we guilty of the same charge of hypocrisy?

It is easy to affirm the fact that the American economy is somewhat of a miracle in the world of today. It is not easy to indicate the basic reasons therefor.

Natural resources and the climate of the United States have played their part. The political system under which this nation developed unquestionably has been an important factor in the growth of its economy, for it has encouraged freedom of enterprise, the elimination of an economic caste system, and the promotion of a sense of equality among its people in their search for an improving standard of living for themselves and particularly for their children.

Against this background of rich natural resources and political freedom, the shortage of labor in the U. S. during the 19th century played a compelling role. Raw materials were plentiful; — production practices used them generously, even wastefully. Manpower, by contrast, was scarce;—production practices husbanded manhours by any and every device possible. The pressure to save manhours expressed itself in the almost fantastic mechanization that America built within its industry. And as the volume of industry grew, the intensification of the division of labor and mechanized production methods kept pace.

Adapted from a paper presented at the 1950 Boston Conference on Distribution.

MIRACLE OF REAL WAGES

A sociological and economic byproduct of these intensive methods was the increasing productivity of manhours year by year, decade by decade. Moreover, the shortage of labor buttressed the conversion of this increased productivity into the benefits of improved real wages, year by year, decade by decade. Fewer hours of labor were required to earn the bare essentials of food, clothing, and shelter; even with a decreasing number of hours in the work week, the mass of American men and women were able to buy more and more of the goods and services they desired. Decade by decade, the American standard of living improved.

Decade by decade, the list of American conversions of yesterday's luxuries into today's necessities has grown longer and longer. Nor has this increasing bill of personal material rights required more hours. In fact, the companion development to increasing desires has been more leisure time in which both to develop those new desires and also to consume the desired products.

For fifty years, the trend of hours of work has been a declining one, as wage rates and working conditions have improved. From a seven-day week of twelve hours a day in some industries fifty years ago, we now have almost a national working schedule for all industries of eight hours a day for five days a week. With that five-day week—and its consequence of a two-day week-end—leisure time has increased greatly.

Time for family association is now so much greater than formerly, that the whole residential pattern of the United States has undergone a substantial revolution. Today, suburban living is the rule in the medium and larger cities. Perfectly good homes in the city area are "wasted" and families take up living in areas five to thirty miles from the cities' centers. The new living areas demand new facilities for streets, sewers, and transportation; and new shopping areas are growing up with billions of investment doing damage to the utility value of the greater number of billions of investment in the centralized shopping areas of the past era of the "six-day work week."

NEW HABITS — NEW PROSPERITY

Does there not appear to be some non-Puritan contradiction of the concept of the "godliness of labor" in an economy that "labors" so hard to reduce the time its members must devote to work? Perhaps there is profligacy lurking in the shortening of the work week. If so, there is also a promise of prosperity in the consequent increase of leisure time. Leisure time is the time for consumption. The new habits of life and living that are inherent in the lengthening of leisure time reflect themselves in enormous increases of needs and desires. The expanded demands that are coming with the five-day week are proving a boon to industry and providing another element of great strength in the development of our domestic markets.

It is this development of an unprecedented domestic market for industry, provided by the steadily improving standard of living for its people, that is believed by some observers to be the outstanding single characteristic of our American economy. For industry, it has made possible the astonishing development of mass production, with its high degree of division of labor and its superlative degree of mechanization. To the American people it has brought goods that have demanded for their purchase less and less of their laboring time, and, therefore, an ability to buy more and more goods with the actual time they give to labor.

These results, however, were not the product of industrial lethargy. Production and distribution did not stand by and wait for this huge domestic market to develop spontaneously. They used every "trick" in the trade—and developed new "tricks" for a new trade of intensive sales promotion. They used every instrument in the band; no muted tunes were played by these sellers of more and more products, but brass cymbals clanged and calliopes screamed and drums banged. There was nothing sedate about the method, and nothing even remotely like the precepts of Puritanism.

Industry and commerce used all the devices available to the newly developed technique of mass distribution — the handmaiden, if not the mistress, of mass production. Today's list includes 5 billion dollars for advertising in magazines, press and radio—(and the most promising giant of them all, television, is still in its diapers)—to teach discontent with the old and promote interest in the new. Style and design changes have created obsolescence as a factor for the renewal markets. It is not enough to own an automobile that will run—for millions of drivers, the model must be the newest. Television is young as a consumer's product. Five years ago, there were practically no sets in American homes; today, there are five million; and five years hence, there may be over twenty million. Already the shadow of obsolescence is being cast upon sets as yet unborn. Color television may reach maturity within the next ten years, and its promise and performance will demand the replacement of millions of sets, still useful, by new devices of a more spectacular nature. There is nothing Puritan about this method of re-creating a domestic market. There is nothing Puritan about making consumers discontented with the products they have already purchased.

In a sociological sense, it certainly is not thrifty and, in a sense, it probably is wasteful to encourage the abandonment of products, still very useful, because of the availability of a new, prettier, better product, that, in turn, is to be replaced by a still newer, prettier, better product, that, in turn, etc.

And then there is industry's most non-Puritan tool of all—the use of fractional selling or installment buying as a method of persuading and making it easier for the mass of American consumers to buy articles which in other nations are reserved for the class-consumers—and a small class at that. Consumer credit is the device by which people meet today's desires out of tomorrow's income. This device is a most compelling factor in the development of our mass markets, particularly of big ticket items like homes, cars, refrigerators, and television. There are 35 million passenger cars registered in the United States, 77% of all the cars in the world. The price of $1500 to $2000 would have been prohibitive for the mass of their owners—but the fractionalization of this price into $50 or so per month has performed a miracle of creating mass markets for class products.

Through this device has come the miracle of mass production of our automotive industry (which, if needs be, may become our armament industry as well). The price of the product is but a fraction of what it would be if limited to cash sales. An automobile industry built on the utility of 11 to 15 years of mechanical life, and on sales only to the cash buyer with money he is willing to draw

out of the bank, would probably satisfy the principles of Puritan thrift, but it might not satisfy the millions of unemployed who could find no work in a shrunken motor industry and its giant corollaries of oil, tires, steel, rubber, textiles, road building, etc.

DOLLAR VELOCITY

At the Harvard School of Business Administration last June, a great American was properly honored when the Lincoln Filene Chair of Retailing was established. At that time, Sumner Slichter, a truly fine professor of American economics, was one of the speakers. In his talk, Professor Slichter referred to the decreasing velocity of money and the resulting danger to prosperity, unless the trend was reversed by business men. Now the velocity of money represents the speed with which you and I dispose of the money we earn. A slow velocity means sticky money and minimum expenditures—and, therefore, high savings —a good Puritan ideal. Rapid velocity means slippery money, maximum expenditures, and lesser savings—a combination almost akin to the old adage about the fool and his money being soon parted. Yet a good professor of economics told business men theirs was the task of increasing the velocity of money if an American peace-time economy was to escape bogging down in recession and unemployment. Sumner Slichter's economics are sound: for spending by consumers is the exact equivalent of selling by industries—and without greater and greater sales, industry cannot remain prosperous. And the Geiger counter of selling is the rate of spending, or the velocity of money. When Puritanism changes from fiction to fact and actually succeeds in dampening spending rates, it insures a growing rate of unemployment.

The serious and literal introduction of the copybook maxims of excessive thrift and prudence *might* be socially desirable to some, but it would deprive millions of Americans of the pleasures of driving and suburban living and the benefits of full employment at the highest real wages in the history of any nation. The effects of Puritanism upon some standards of morality are debatable—but the effects of that economic Puritanism upon prosperity and the American standard of living are not debatable—they would be disastrous.

SPECTER OF "OVERSAVING"

It will be obvious to you that I have been talking of the sorry effects of laying the dead hand of oversaving *by American consumers as a whole* upon our economy. It would ill befit me as a banker to preach profligacy on the part *of the individual* who is already on his uppers. It is no part of my desire to advocate habits of spending which would multiply the ranks of wards of the state.

The benefits to Americans of intensive and even expensive methods of selling have been extraordinary in terms of the lower costs and fewer hours of labor required to earn not only the necessities but also the luxuries of living. Economic Puritanism is a fiction, and has been a fiction in our economy for over a hundred years. Its conversion into fact might satisfy the dour and the dignified —but it would do unlimited damage to the great mass of American men and women.

For the sake of our standard of living, which must quicken its pace of improvement if we are to maintain a prosperous economy on a peace-time basis, let us be realistic about fact and fiction, and be on guard against economic Puritanism for the danger it truly represents.

All of the factors, premises, reasoning, and conclusions within this paper have been based upon an analysis of the American economy in peace-time — or rather an economy in which the major stimuli to economic action are derived from peace-time products.

If we are to find ourselves again at war or in a period of "no peace" in which expenditures for war products and services are greatly to increase, then we must expect great changes in some phases of our activities—but not in basic principles.

If actual war preparation should demand steel and fibers and food and men, then civilians must deny themselves some of the goods and services to which they are accustomed. Standards of living must decline. Spartan living must be encouraged. Utility must replace obsolescence as the prime factor in determining the time to purchase a new car, a new radio, television, or home.

But that change in living habits does not occur because Puritanism in a war economy becomes the fact it never was during peace-time. The economy of war has nothing Puritan about it. It is wasteful, profligate, non-productive. It is concerned with producing goods not for use but for destruction. Because of the non-Puritan, wasteful, profligate demands of a war economy, not even an economy as rich as ours can supply *all* the guns we need and all the butter we desire. In days of war or war preparation, the wastes of war have precedence over the wants of peace. Sociologically, it is an unfortunate priority that is demanded for the very safety of the nation. But it may well be an essential priority if we are to have the chance and privilege of again returning some day to our American way of free life and non-Puritan, prosperous existence.

WHY MORE INDUSTRIAL ENGINEERS DON'T GET INTO TOP MANAGEMENT

By BRUCE H. WALLACE, Vice President and Treasurer, Otis Elevator Co.

Probably the most important factor has been that Engineers have traditionally been specialists. They started that specialization early in their college days and have continued it throughout their professional careers. Even the college curriculum of years gone by was too specialized, and if that were not the case, most engineering students made the condition worse by showing very little interest in subjects not closely related to Engineering. Such subjects as English and Economics were generally given the minimum of attention. In retrospect, I think most of us would now admit that we would be better off if we had concentrated a little more on such subjects.

Even after graduation most Engineers have continued to be specialists with the result that they are experienced in a narrow phase of a particular business.

The Engineer cannot just drop his present work and begin to move into the other departments' affairs, but he can start a campaign of self education, break away from this concentration on a specialized field, and begin to learn about the overall operation of general business and of his company's business in particular.

You will find that there are many problems other than that of production, the one with which you are already thoroughly familiar. You will find that the business structure is built on about the same principle as a milking stool. It depends upon the correct functioning of three legs—Production—Sales—Finance. If you follow that analogy further, you will see that all of the legs are of equal importance.

Excerpt from one of the papers published in the PROCEEDINGS OF THE 1949 ANNUAL S.A.M. CONFERENCE. *See page* 18.

SOCIETY NEWS

Annual Conference Highlights

TAYLOR KEY

GENERAL SOMERVELL'S distinguished career is highlighted by his pioneering work in introducing industrial engineering techniques to public administration and military service applications.

He initiated and developed the concept of "management control" in public service work, in the Army Service Forces which he led and in its present applications through his leadership in industry.

HUMAN RELATIONS AWARD

INTRODUCING GENERAL JOHNSON to members and guests at the Society's Annual Banquet, Dillard E. Bird, National President of S.A.M., made the following remarks:

"It has been quite obvious that the technological progress, which we have made in the past, has been outstanding. It has also been obvious to many of us that our development of the science of human relations has not kept pace with those technological developments and that we cannot again move forward until our human relations developments are brought apace.

Many of us have talked about this problem, but too few of us have done enough about it. It will be my pleasure to make the presentation of this year's Human Relations Award to a man who has done something about it — to one of this Nation's foremost leaders in this field— one who has worked at this problem, who has studied it and practiced it—a man whose name always comes to mind when human relations accomplishments are discussed."

GILBRETH MEDAL

THE CITATION presented to Phil Carroll reads:

"For his outstanding contributions to Work Measurement in the field of Industrial Engineering;

For his sincere devotion to and pursuance of the many major responsibilities given him by our Society;

For so freely imparting of his knowledge through his textbooks and writings on the subjects of management controls, work standards and cost practices;

For the liberal donating of his time and energy through lectures at our universities and technical societies;

For his kind and generous training and encouragement of young engineers so that they, too, might emulate his high professional and ethical standards;

For his ability to orient correctly and inspire the thinking and action of management in the elimination of fatigue and the improvement of working conditions;

For further demonstrating the significance of motion patterns with respect to work effort through the medium of training films;

For at all times following the best traditions of the Gilbreths;

For these reasons, with pride and pleasure, the Society for Advancement of Management presents to him the GILBRETH MEDAL FOR 1950"

Phil Carroll

EMERSON TROPHY

THE WASHINGTON CHAPTER was commended for its role in calling attention to many of the Hoover Commission's recommendations in the management area. Mr. Hansen, who received the Award on behalf of the Chapter, described as features of the Washington program dinner meetings, addresses by top federal officials, such as Army Secretary Frank Pace, Postmaster General Donaldson, Agriculture Secretary Frank Brannan, and ECA Administrator W. C. Foster. The Washington group also, through their round-table meetings and conferences, made many contributions to budget accounting and other management areas.

MODERN INDUSTRY AWARD

THE CINCINNATI CHAPTER'S work in establishing an unusual Advanced Management Course at the University of Cincinnati won the *Modern Industry* Award for 1950.

The Award, a sum of $1,000, is sponsored by *Modern Industry* magazine under the direction of Eldridge Haynes, publisher.

"It is our hope," Mr. Haynes said, "that this award will encourage more projects which will at once advance our knowledge of management methods and promote a better public understanding of the vital part management does and must continue to play to keep America free and prosperous."

The complete project, of which the Advanced Management Course is a part, includes the establishment of the "Foremen's Educational Institute" and an "Executive Laboratory in the Group Process."

A unique feature of the award stipulates that it must be spent on a project to further promote the improvement of management methods.

MEMBERSHIP KEY AWARDS

Highest Percentage Increase in Membership

GREENSBORO CHAPTER; Represented by D. E. Henderson

Highest Numerical Increase in Membership

CLEVELAND CHAPTER; Represented by Wilbur H. Peter, Jr.

Thomas E. Kelly congratulating George D. Hansen who received the Emerson Trophy on behalf of the Washington Chapter.

THE THIRD ANNUAL Industrial Engineering Institute will be co-sponsored by the San Francisco Chapter of the SOCIETY FOR ADVANCEMENT OF MANAGEMENT, and the University of California. The Institute is scheduled for February 2 and 3, 1951 in Berkeley, California. The two day meeting will include sessions on WORK SIMPLIFICATION, TIME STUDY, STANDARD DATA SYSTEMS, PRODUCTION ENGINEERING AND HUMAN ENGINEERING. Each session is slanted towards practical methods of cost reduction.

Some of the many distinguished speakers who will participate are: Dr. M. E. Mundel, Chairman, Industrial Engineering, Purdue University; J. A. Richardson, The Ford Motor Company, Richmond, California; Mason Haire, Professor of Psychology, University of California; H. S. Kaltenborn, Professor, Industrial Relations, University of California; Wm. Gomberg, Director, Management Division, ILGWU, New York; T. E. Piper, Chief Materials & Process Engineer, Northrop Aircraft Company, Hawthorne, California; Ralph M. Barnes, Professor of Engineering and Production Management, University of California at Los Angeles.

The SECOND PLANT MAINTENANCE CONFERENCE jointly sponsored by S.A.M. and A.S.M.E. announces a three day program beginning January 15, 1951 at the Public Auditorium in Cleveland, Ohio. Full details of the program can be obtained from Clapp & Poliak, Inc., 341 Madison Avenue, New York 17, New York. A Plant Maintenance Show will be held concurrently. There is no charge for admission to the Show, registration for the Conference Session will cost $6.00 per person.

WILLIAM A. HAMOR of the Pittsburgh chapter has been named by the Pittsburgh Section of the American Chemical Society to receive its Pittsburgh Award for 1950. The award, a bronze plaque which is granted annually for outstanding service to chemistry, will be presented to Dr. Hamor at a dinner in the University Club of Pittsburgh on December 21.

Dr. Hamor is Assistant Director of Mellon Institute of Industrial Research. He is being honored for his noteworthy accomplishments in research management, and for his authorship and editorship of numerous scientific publications.

F. M. HOLMES, JR., of the Greensboro, N. C. chapter is spending three months in Germany as an industrial consultant for the ECA. Mr. Holmes has been associated with Fieldcrest Mills since 1938.

Emerson Trophy Standings
Chapter Performance Award
As of November, 1950

CHAPTER	TOTAL
Washington	857
Milwaukee	718
Greensboro	687
Detroit	607
New York	586
Pittsburgh	529

Eldridge Haynes presents $1,000 check and citation to Harry M. Hopkins representing the Cincinnati Chapter, winners of the 1950 Modern Industry Award.

The Management Bookshelf

Communications Within Industry, by RAYMOND W. PETERS, 198 pages, New York City, Harper & Bros., $3.00.

THIS BOOK should be especially useful to the harried personnel director whose management has gotten the "communication bug" and is insisting on more and better programs for communicating to the worker. *Communication Within Industry* constitutes a very able cataloguing of most of the techniques of communication, both up and down the line, which are presently being used in companies with extensive communication programs. All the benighted personnel manager has to do is thumb through the book and come up with enough ideas about communicating to employes to satisfy his insistent management for several years to come.

Communication Within Industry, however, has more than an immediate practical value. The author also attempts to analyze a number of the underlying factors which either facilitate or militate against adequate communication in industry. Among these factors, he includes the history and growth of industry, unions, and various psychological and sociological factors affecting communication. The author is keenly aware of the fact that much of the communication that occurs in industry is, after all, merely one expression of management-employe relations. The two cannot be separated. It is impossible to discuss communication as a managerial tool or device without reference to the human relations climate in which it occurs. Indeed, this is like describing fine music in terms of the technique of making a phonograph record without reference to the composer of the music and the skill of the orchestra rendering it.

We have been for a long time convinced that communication succeeds or fails to the extent that employes trust and have confidence in management. This kind of confidence can seldom be developed through communication techniques taken over from "hucksters". It begins rather with mundane, day-by-day experiences on the job. It grows out of the experience of working together with others in common endeavor. It is reinforced to the extent that employes gain a real stake in the organization and feel part of it. Few of these experiences can be obtained, even vicariously, through a company newspaper, an economic education program, or a bulletin board.

Mr. Peters is cognizant of these factors in communication but his main purpose is that of outlining the various techniques of communication. Here he has done an able job.

DAVID G. MOORE
Personnel Consultant
Sears, Roebuck and Company

Administration, by ALBERT LEPAWSKY. 669 pages. New York, 1949: Alfred A. Knopf. $5.00.

HERE IS a book of a new kind on an old subject, the art and science of administration and management.

A teacher often feels it a duty to simplify his subject by digesting a wealth of knowledge and experience in order to present to the student "the" doctrine or "the" solution. His position can be defended for a book addressed to the layman or for an elementary lecture. Yet at best the reader loses much of the glow that went with the forging of principles from conflicting beliefs, not to mention the sparks of conflict as differing views hammered together. Also, the more advanced reader may fail to discover that a pet theory has already been given thorough trial but found wanting.

Professor Lepawsky has an answer to this problem. He has done a fine job of telling the story of administration with the help of short readings from the works of some 250 different practitioners and professors of administration. I say "story" because the book reads so easily; I do not mean to suggest that it is primarily a history. The quotations have been carefully selected and are so smoothly fitted together as to keep a good feeling of continuity. This material is so organized that the reader himself can compare and contrast the ideas of challenging thinkers in the field. In each case Professor Lepawsky then comments, summarizes, and helps with the process of digestion.

The long list of men (and women) whose works are sources defies brief classification. Towne, Taylor, Gilbreth, Brandeis, and other advocates of scientific management are present. Other philosophers on administration are also heard from: Fayol, Dimock, Urwick, Hopf, Follett, Fish, Roethlisberger, Ruml, Kimball. So also are many government administrators: most American presidents, numerous domestic and foreign department heads. Napoleon, Hitler, and Stalin are not overlooked. Industry is represented by Chrysler, Sloan, Donald. Some labor views are expressed by Murray and Reuther. Several of the most dynamic and graphic passages in the book are those of relatively unknown men.

For the novice there are sharply focussed (sometimes very amusing) prose pictures to answer questions such as, exactly what does an administrator do? Characteristically, this one is answered with personalized descriptions of a day in the life of Alfred P. Sloan, Jr. and a day in the life of the Secretary of Commerce. To give further breadth, these pictures are followed by more formal activity analyses of the administrative workday contributed by other observers.

Administration is divided into three parts: "The Art of Administration", "The Science of Organization", "The Technique of Management". Conflicting views on the relative scopes of these terms are among the subjects aired.

Throughout the book there is somewhat more emphasis on public administration than on business administration. However, any reader in one of these fields who thinks there is nothing to be learned from the other can easily skip a few sections. I recommend the book to both audiences.

JOHN W. ENELL
Assistant Professor,
Administrative Engineering
New York University

Layout Planning Techniques by JOHN R. IMMER, McGraw-Hill Book Company, New York, 1950, 430 pages, $5.00.

"WHEREVER THERE is work or activity involved or where people occupy space, there is a layout problem." This is the scope of layout planning as stated by *Professor Immer.* Unlike the treatment given this subject by most other writers, the author does not restrict his text solely to the much-discussed problem of layout in the industrial plant. The application of layout techniques to fields as unrelated as merchandising, farming, banking, and building construction are considered. For this reason, the book will prove most interesting to students of industrial engineering and business administration and to those businessmen who are cognizant in any way of the advantages to be gained through the use of planned layouts.

The practicing layout engineer has not been slighted. For him, this volume will assume the proportions of a ready-reference handbook. Case histories and references to specific industrial problems are plentiful. Roughly fifty percent of the volume's pages present photo-

(Continued on next page)

Management Bookshelf

(*Continued from page* 28)

graphs, sketches, and charts pertinent to the accompanying written material. Appendices are included which suggest arrangement factors for office layout, standard template features, standards for layout models, and general rules for materials handling.

LAYOUT PLANNING TECHNIQUES is extremely easy reading. From the elementary method for analyzing layouts to the ticklish problem of balancing the production line, the subject matter is presented in outline form with numbered sections and lettered sub-headings in each chapter.

In emphasizing the necessity for selling a new layout to management *Professor Immer* hits a much-battered nail on the head. The answer lies, in the most part, in vivid presentation. To this end, the author devotes an entire section to the "*Presentation of Layout*" placing heavy emphasis on the use of three-dimensional models. He cites an interesting incident in which a client of a consulting firm turned down a proposed layout revision as presented by blueprint. Some time later he heartily endorsed a certain arrangement of scale models. He was then advised that it was the same layout he had negated previously. Just as the 'proof of the pudding is in the eating', so is the layout engineer's success in the implementation of his plan.

This volume is recommended to newcomers to the field for its broad treatment of the subject, and to the experienced layout man as a reference volume for his bookshelf.

MARK KNAPP

FOSTER D. SNELL INC.
RESEARCH
CHEMISTS ENGINEERS
LABORATORIES
29 W 15TH ST. NEW YORK 11, N.Y.
WATKINS 4-8800

LOUIS J. KROEGER AND ASSOCIATES
Serving Business and Government
Organization and Procedure Analysts
Personnel Specialists
507 James Oviatt Building, Los Angeles
785 Market Street, San Francisco

PROFESSIONAL NOTICES

PHIL CARROLL
Registered Professional Engineer
MAPLEWOOD, N. J.

BRUCE PAYNE and ASSOCIATES Inc.
Westport I, Connecticut
Boston 16, Massachusetts
Chicago 11, Illinois
MANAGEMENT CONSULTANTS

HOTEL ESSEX HOUSE
1050 Broad Street at Lincoln Park
Newark, N. J.
A. C. Allan, General Manager
Largest and Most Complete Catering, Banquet, Ballroom, and Meeting Facilities
"Where the Northern New Jersey S.A.M. Chapter Meets"
Home of THE "CAROUSEL"
Newark's most beautiful Cocktail Lounge and Supper Club
For inquiries and reservations
Telephone MItchell 2-4400

CAREER POSITIONS
For Industrial Engineers and Industrial Relations Men
GEORGE A. SHANNON
Agency
11 WEST 42nd ST., N. Y. C. LA. 4-6792

HUMM PERSONNEL SERVICE
Consultants in Personnel Procedures
Measurement of Mental Health
1219 West Twelfth Street
Los Angeles 15, California
Mail address:
Box 1433 Del Valle Station
Doncaster G. Humm, Director

POSITIONS OPEN

INDUSTRIAL ENGINEER — excellent opportunity in national known food Company near Syracuse, N. Y. Engineer graduate, preferably I. E. with three to five years experience in time study and wage incentives. Submit complete resume to SAM, box 302-0.

EDWARDS & BARNES
Management Engineers
FIRST NATIONAL BANK BUILDING
PITTSBURGH, PENNSYLVANIA

METHODS ENGINEERING COUNCIL
CONSULTANTS IN INDUSTRIAL MANAGEMENT
718 Wallace Avenue - Pittsburgh 21, Pa.
Bridgeport 5, Connecticut
H. B. MAYNARD, President

GRIFFENHAGEN & ASSOCIATES
Established in 1911
CONSULTANTS IN MANAGEMENT
Advice and technical assistance on problems of policy, organization, procedure, personnel, and finance.
Chicago New York Boston
Washington Milwaukee Los Angeles

GEORGE H. ELLIOTT and Company
CONSULTING MANAGEMENT ENGINEERS
521 Fifth Avenue, N. Y. 17 • MU 7-5768

The Proceedings of
The Annual Conference on Principles Methods and Techniqu

for Increasing Productivity, Reducing Costs, Improving Human Relations

A complete edition including the 29 outstanding papers presented at all sessions of the Society's Conference.

Productivity & Cost Reduction Sessions

"METHODS & COST REDUCTION"
Charles Winkelman, Supervisor of Industrial Engineering, Belden Mfg. Co.

"COST REDUCTION THROUGH WORK SIMPLIFICATION"
Charles B. King, Methods Supervisor, E. I. du Pont de Nemours & Co.

"ENGINEERING A PROFIT PATH"
Fred V. Gardner, Fred V. Gardner Associates

"INDUSTRIAL MOBILIZATION-1951"
Leo Cherne, Research Institute of America

"PRODUCTION FLEXIBILITY FOR PARTIAL MOBILIZATION"
George C. Houck, Assistant to President, Harris Seybold Co.

"PLANS AND PRACTICES IN EXPANDING PLANT FACILITIES"
A. B. Dick III, President, A. B. Dick Co.

"THE ECONOMICS OF MACHINE REPLACEMENTS"
Everett M. Hicks, Manager, Grinding Machine Division, Norton Co., Worcester

Human Relations Sessions

"MANAGEMENT VIEWS LABOR CONTROLS"
Ray Suter, Director of Industrial Relations, Ohio Chamber of Commerce

"PLANNING TO MEET WARTIME MANAGEMENT PROBLEMS"
Robert C. Goodwin, Director of U. S. Employment Service, Dept. of Labor

"EFFECTIVE MANPOWER UTILIZATION UNDER EMERGENCY CONDITIO
Harry F. Gracey, Director of Management Development, SKF Industries

"INDUSTRIAL MOBILIZATION-1951"
Leo Cherne, Research Institute of America

"EXECUTIVE TRAINING AND DEVELOPMENT"
Earl G. Planty, Executive Counselor, Johnson & Johnson Co.

"EFFECTIVE COMMUNICATIONS"
Max Bass, Employee Publications Manager, Caterpillar Tractor Co.

"MOTIVATION OF HUMAN RESOURCES"
Duncan J. Morgan, Director of Human Relations, ATF Inc.

"A PHILOSOPHY OF MANAGEMENT *and* MANAGEMENT'S NEW RESPONSIBILITY"

Brehon B. Somervell, President, Koppers Company, Inc.

"FREEDOM BEFORE MANAGEMENT"

Robert Wood Johnson, Chairman of the Board, Johnson & Johnson

"FORWARD LOOKING PURCHASING"
Stuart F. Heinritz, Editor, Purchasing

"QUALITY CONTROL—A TOOL FOR HUMAN ENGINEERING"
Roscoe M. Smith, Director of Quality Control, Ford Motor Co.

"NINE INCENTIVE PLANS IN A 200-MAN PLANT"
Ford R. Larrabee, Vice President Manufacturing, Cincinnati Industries

"INCENTIVE MANAGEMENT"
James F. Lincoln, President, Lincoln Electric Co.

"DEVELOPMENT OF MAINTENANCE STANDARDS"
Guerard Mackey, Engineering Dept., E. I. du Pont de Nemours & Co.

"INCENTIVE DOUBLED OUR MAINTENANCE OUTPUT"
Palmer Bliss, Chief Industrial Engineer, R. G. LeTourneau Co.

"MAKING INDUSTRIAL ENGINEERING POLICIES EFFECTIVE THROUGH SUPERVISORS AND WORKERS"
R. Conrad Cooper, Vice President, Industrial Engineering, United States Steel Corp.

"HUMAN RELATIONS ASPECTS OF MANAGEMENT"
E. H. van Delden, Ph.D., New York University

"ADAPTING ORGANIZATIONAL PATTERNS TO CHANGING CONDITIONS"
Charles D. Doerr, Vice President, Personnel, McKesson & Robbins

"GEARING WAGE PAYMENT POLICIES TO WARTIME ECONOMY"
Albert L. Kress, Management Consultant

"PREPARING SUPERVISORY MORALE TO MEET EMERGENCY CONDITIO
Elliott I. Petersen, Vice President for Manufacturing, Bigelow-Sanford Carpet

"INCENTIVE MANAGEMENT"
James F. Lincoln, President, Lincoln Electric Co.

"MAN AND MACHINE RELATIONSHIP"
Dr. Morris S. Viteles, Univ. of Pennsylvania

"THE LOGIC OF EFFICIENCY AND ITS ACCEPTABILITY IN PRACTICE"
Dr. Robert P. Brecht, Wharton School, Univ. of Pennsylvania

"WORKER AND UNION ATTITUDES TOWARDS TECHNOLOGICAL CHANG
Alfred Hoffman, General Secretary-Treasurer, American Federation of Hos Workers.

EACH PAPER listed above was prepared by a specialist in the particular field covered. The authors are successful executives who have distinguished themselves by the performance of pioneer creative work in the field of management.

The practical, proven plans they describe and the basic principles and theories discussed are made available by the Society in accordance with its long established principle of encouraging the inter-change of information and ideas that promote the use of scientific management.

Order Coupon

SOCIETY FOR ADVANCEMENT OF MANAGEMENT

84 William Street, New York 7, N. Y.

Please send me_____copies of the Proceedings of the 1950 Annual Fall Conference on Principles, Methods and Techniques for Increasing Productivity, Reducing Costs and Improving Human Relations (November 2, 3, 1950)

☐ **at Member's Price, $3.50 each**

☐ **at Non-Member's Price, $5.00 each**

Enclosed find check (or money order) for $_____

Name _____

Address _____

Make checks payable to:
SOCIETY FOR ADVANCEMENT OF MANAGEMENT, 84 William Street, New York 7, N. Y.

(1250)